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ABSTRACT

This report presents data on the Missouri teacher labor market, using existing administrative records about the state's public schools, teachers staffing them, and students attending them from 1994-95. Data are presented on: enrollment growth (size and distribution of public school enrollment changes); Missouri's teaching workforce (size and characteristics of Missouri's public school teacher workforce during 1994-95 and 1998-99 and changes occurring during the study); labor market dynamics (number of teachers who left public school districts and teaching for various reasons and overall school district hiring rates); teacher supply (estimated annual additions to the supply of certified teachers); and vacancies and the supply of newly certified teachers (demand for and supply of teachers in Missouri's public schools). Overall, the labor market provided teachers to accommodate most teacher turnover and growth from 1994-95 and 1998-99. Significant numbers of teachers came from nontraditional sources. Census classifications and Missouri Department of Elementary and Secondary Education supervisory areas are appended. Also attached are: results from additional analyses conducted to investigate the role of pay in teachers' decisions to leave teaching; a district-level perspective on recruitment and retention in Missouri schools; and recommendations of the Commissioner's Task Force on Recruitment and Retention. (SM)

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ED 450 123

Report on the Recruitment and Retention of Missouri's Public School Teachers

Commissioned by the Missouri Department of Elementary and Secondary Education

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January 2000

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A Statistical Analysis of the Labor Market For Missouri Public School Teachers: 1994-95 to 1998-99

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December 16, 1999

Introduction

Assuring an adequate teaching workforce for Missouri's public schools is an important matter for the state's educational policy makers. The anticipated need to replace more than two million teachers nationwide during the next decade is cited in both the educational literature as well as the popular press. Two national studies have suggested that rising enrollment levels and an aging teacher workforce will threaten the ability of the nation to provide qualified teachers for the classrooms of our public schools (National Commission on Teaching and America's Future [NCTAF], 1996; National Center for Educational Statistics [NCES], 1999). Others have questioned the validity of teacher shortage projections (Feistritzer, 1998). Nonetheless, these concerns have stimulated national, state, and local efforts to evaluate and improve teacher recruitment and retention policies and practices.

This statistical report represents an attempt to better understand the character and dynamics of the Missouri teacher labor market. This analysis is one part of statewide efforts to identify, anticipate, and ameliorate possible staffing problems. The report was prepared from existing administrative records about the state's public schools, the teachers that staffed them, and the students who attended them for the 1994-95 through 1998-99 school years. Information about private schools and their teachers and students are not a part of this statistical report.

The data about Missouri's public school enrollment levels and teachers are organized and presented in five major sections that represent a labor market analysis of Missouri's professional teaching workforce. A sixth section presents conclusions and possible policy implications. The analytic sections of the report are described briefly below.

Enrollment Growth
Presents data about the size and distribution of public school enrollment changes that occurred during the 5-year study period.

Missouri's Teaching Workforce
Describes the size and selected characteristics of Missouri's public school teacher workforce in 1994-95 and 1998-99 and changes that occurred during the 5-year study period.

Labor Market Dynamics: Turnover, Exits, and New Hires
Estimates the number of teachers who left public school districts and the teaching profession for various reasons and overall school district hiring rates.

The Supply of Teachers
Estimates annual additions to the supply of certified teachers.

Vacancies and the Supply of Newly Certified Teachers
Compares estimates of the demand for and the supply of teachers in Missouri's public schools.

Data Sources and Analytic Methods

State-level administrative records were the sole sources of data used in this study. Data from the Department's Core Data files were used to estimate changes in public school enrollment levels and the size and composition of the public school teacher workforce. Information from the Missouri Public School Retirement System (MPSRS) was used to estimate retirement rates among teachers who stopped appearing on the rolls of public school teachers. Data from the Department's certification files were analyzed to estimate additions to the supply of qualified public school teacher candidates. Data from Missouri's Coordinating Board for Higher Education were used to examine the rate that education graduates from public colleges and universities taught in the state's public schools.

Statewide data were disaggregated, whenever possible. We used the following classifications systems for grouping school districts:

> Census Classifications: groups school districts based on community characteristics and treats the Kansas City and St. Louis city school districts as separate classifications. For example, one of the categories in this classification is Urban Fringe – Large City which includes school districts such as Afton, Ferguson-Florissant, and Blue Springs that are in communities adjacent to large cities. Appendix I lists all public school districts in each of the Census Classification categories.
>
> DESE Supervisory Areas: groups school districts based on their geographic location in the state. Kansas City and St. Louis city school districts are included in the Kansas City Area and St. Louis Area categories, respectively. Appendix II contains a map showing each of the DESE Supervisory Areas and lists all public school districts in each of the geographic regions.

In some instances we report teachers by gender and by selected racial groups. In addition, we have reported teachers and the potential supply of teachers by teaching field. For teachers, teaching field represents the subject area where they taught the majority of time. For teacher candidates, the assigned field was the subject area associated with the first certificate they received in 1998.

1. Enrollment Growth: 1994-95 to 1998-99

An obvious factor that influences the demand for public school teachers is the size of the student population. One of the concerns expressed in the numerous reports on teacher recruitment and retention is that the school-aged population, i.e., the number of children between 5 and 18 years of age, is growing faster than our teacher recruitment and preparation systems can service. Frequently called the "baby boom echo," this growing segment of the population reflects the fact that the children of the baby boom generation have entered their child-bearing years. This section of the report presents data on changes in enrollment during the 5-year study period.

Definitions and Procedures

The charts and tables in this section were prepared by comparing the actual reported public school enrollments, excluding summer school, for the 1994-95 and 1998-99 school years. Enrollment statistics were extracted from Core Data reports maintained by the Office of Social and Economic Data Analysis (OSEDA) at the University of Missouri-Columbia. Public school enrollment growth is the simple difference obtained by subtracting 1994-95 enrollments from 1998-99 enrollments.

Looking only at public school enrollment data will under-estimate the total growth in Missouri's school-aged population. However, these data do provide an accurate picture of the changes in public school enrollments. Charts showing enrollment growth by type of community (Census Classifications) and for geographic areas (DESE Supervisory Areas) also are presented to describe the distribution of enrollment changes. See Appendix I for a listing of school districts included in each Census Classification category and Appendix II for a listing of school districts in each DESE Supervisory Area.

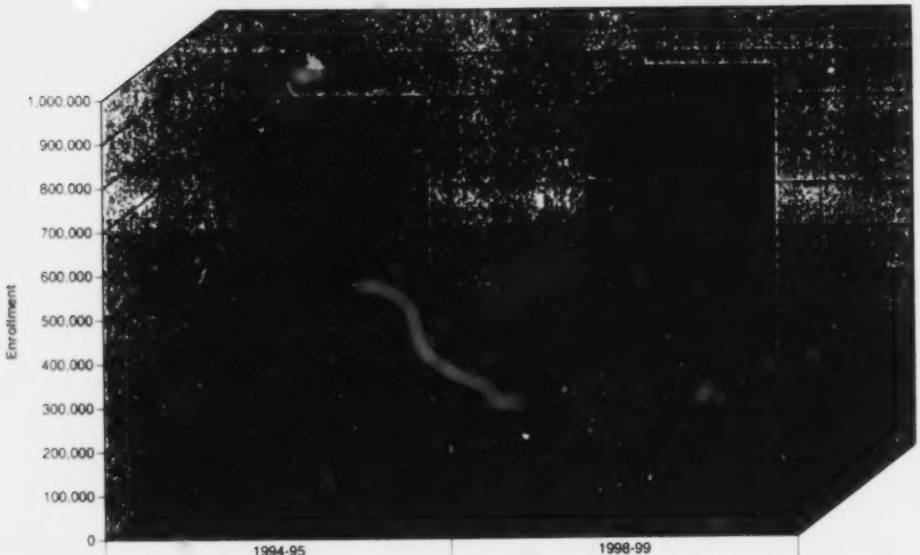
These data do not present estimates or predictions of increases in Missouri's school-aged population, nor can they be used to estimate future trends in enrollments based on population trends.

Major Findings

- Public school enrollments increased by 32,888 students or 3.8% between 1994-95 and 1998-99.

- Enrollment growth varied by type of community and by geographic region. The Kansas City school district, large towns, and southeast Missouri showed declines in enrollment. The largest increases in enrollment occurred in the communities near large urban centers, e.g., around St. Louis and Kansas City (Urban Fringe Large City, 15,291), and the largest rate of increase occurred in the communities around Joplin and Springfield (Urban Fringe Medium City, 9.7%).

Figure 1.1 Missouri Public School Enrollment Growth



	1994-95	1998-99
Enrollment Growth	0	32,888
Enrollment	862,462	895,350

Overall, Missouri public school enrollments grew by 32,888 students (3.8 percent) between the 1994-95 and 1998-99 school years. This might suggest a corresponding increase in the demand for, and therefore the employment of, public school teachers. However, the relationship between the observed growth in the number of public school students and the corresponding demands for new teachers depends on characteristics of the students as well as other policies and practices.

For example, a more careful analysis of the enrollment growth indicates that changes were relatively uneven across grade levels. The largest increases were observed in grades 1 and 2 (4,748 and 4,325 students, respectively). There currently is an emphasis on reducing the student to teacher ratio in the primary grades. These factors would suggest that the number of additional teachers needed to accommodate this growth of more than 9,000 first and second graders would be greater than the number of additional teachers needed to accommodate a similar increase in fifth and sixth grade students.

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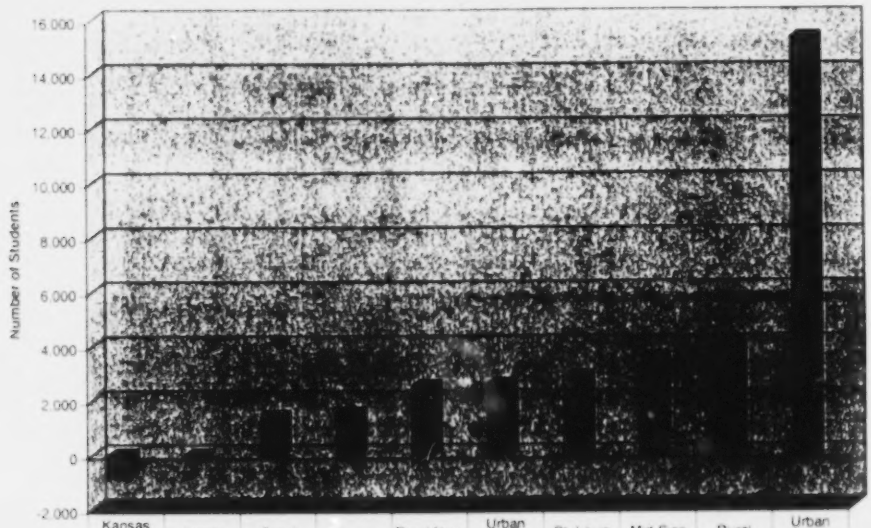
Figure 1.2: Public School Enrollment Growth 1994-95 to 1998-99 by Census Classification



	Kansas City District	Large Town	Small Town	Large City	Rural Non-Metro	Urban Fringe - Medium	St. Louis District	Mid-Size City	Rural Metro	Urban Fringe - Large City
Enrollment Change	-854	-71	1,416	1,537	2,520	2,587	2,855	3,572	4,035	15,291
Percent Change	-2.3%	-0.5%	1.0%	4.0%	1.8%	9.7%	7.0%	4.3%	7.2%	5.3%

Enrollment growth varied widely by type of community. (See Appendix I for a list of school districts in each Census Classification category.) More new students were enrolled in the suburban St. Louis and Kansas city areas (Urban Fringe - Large City) than any other classification. However, the rate of growth was higher in medium-sized communities around urban areas, rural metropolitan areas, and, somewhat surprisingly, in the St. Louis public school district. Enrollments declined in the Kansas City public school district and in other large towns. The growth in student enrollment might be used to estimate the total number of teachers required in each type of community.

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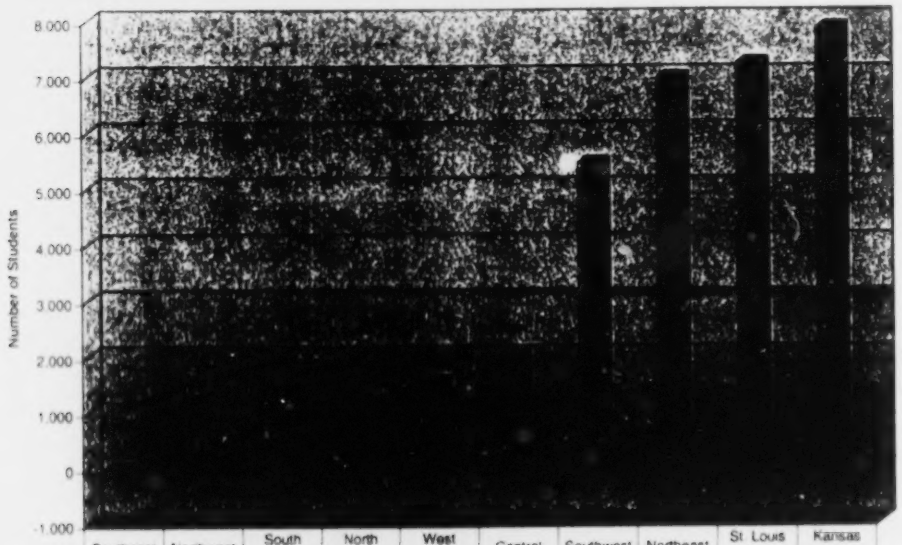
Figure 1.3: Public School Enrollment Growth 1994-95 to 1998-99 by DESE Supervisory Area



	Southeast	Northwest	South Central	North Central	West Central	Central	Southwest	Northeast	St. Louis Area	Kansas City Area
Enrollment Change	-141	209	495	1,253	1,558	2,028	5,446	6,965	7,226	7,849
Percent Change	-0.2%	0.5%	1.3%	3.0%	3.9%	3.4%	5.9%	7.5%	3.2%	4.8%

Enrollment growth also was differentially distributed across geographic regions. (See Appendix II for a listing of school districts in each geographic region.) The greatest growth in enrollments occurred in the southwest, northeast, and the St. Louis and Kansas City areas.

Note that the Kansas City *District* and the St. Louis *District* from figure 1.2 are ***not*** the same school districts reported in the Kansas City *Area* and the St. Louis *Area* in figure 1.3 above. These differences will be consistent throughout the report whenever data are presented for Census Categories versus DESE Supervisory Areas.

It is interesting to note that the overall enrollment changes in the Kansas City geographic area masked the decline in enrollments that was observed in the Kansas City Public School district in Figure 1.2. The census classification groups similar types of communities and treats the two major urban centers as independent entities; supervisory areas allow differences across dissimilar districts to be "averaged" together.

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2. The Teaching Workforce in Missouri Public Schools: 1994-95 and 1998-99

The overall supply of professional teachers begins with the current labor force. This section of the report describes the public school teaching workforce, based on information submitted by school districts to the Department as part of their annual Core Data reporting requirements. The size and composition of the teacher workforce in the 1994-95 and 1998-99 school years are presented, and selected changes are described.

Definitions and Procedures

The Department's Core Data files were processed to produce a list of teachers for each year between 1994-95 and 1998-99, inclusive. The teaching field was determined for each teacher by examining the courses he or she taught and determining where the majority of his or her teaching time was allocated. For example, assume a teacher taught four mathematics classes and two physics classes. Because a majority of that teacher's time was devoted to the mathematics classes, the teacher would be classified as a mathematics teacher.

Demographic variables for each teacher (gender and race) and years of teaching experience were pulled from the Core Data files. Teachers' ages were determined by matching teachers from the Core Data files with their records in the certification data files. Teachers' age and experience levels were organized into multi-year bands for analysis and presentation. The experience level bands reflect the current experience year for each included teacher, e.g., a teacher in the 1 to 5 year band really has 0 to 4 years prior experience and their current employment will allow them to accrue their 1st through 5th year of experience.

School districts and their teachers also were assigned to types of communities (census classifications) and geographic regions (DESE supervisory areas). (See Appendices I and II for listings of school districts assigned to the various categories.)

Major Findings

- The number of teachers in Missouri public schools increased by 5,112 teachers (8.9%) between 1994-95 and 1998-99. The growth rate of teacher employment was more than double the growth rate of enrollments.

- The relationship between enrollment growth and the growth in employed teachers varied by geographic region and type of community.

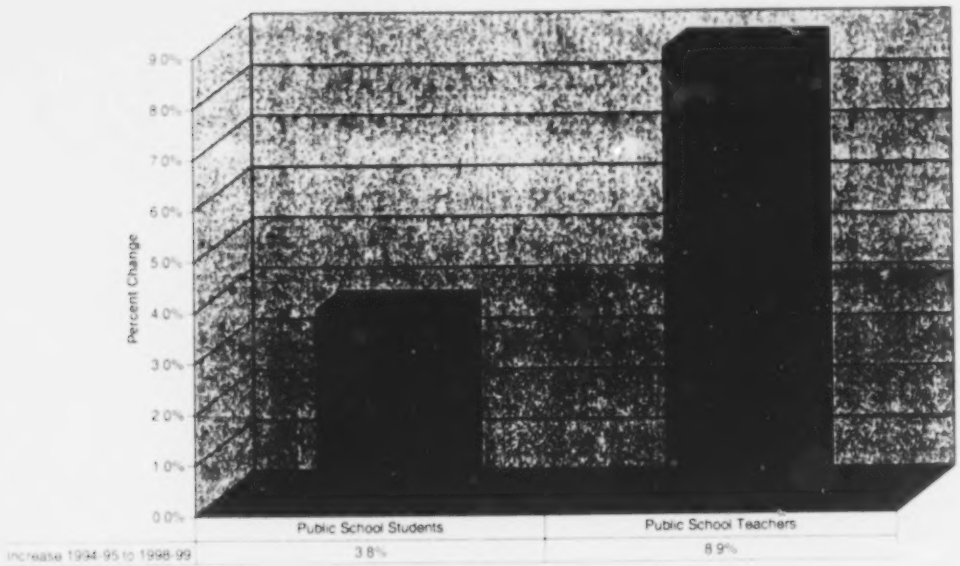
- The public school teaching workforce is composed primarily of white females (72%) and there is a relatively large and growing disparity between the racial composition of the student population and racial composition of the teaching workforce.

- The largest teaching field is elementary education which comprises nearly a third of the entire teaching workforce, followed by special education which comprised approximately 14% of the teaching workforce in the 1998-99 school year.

- The age distribution of public school teachers shows that approximately 30% of all teachers are 50 years old or older.

- The distribution of public school teachers by experience levels shows that more than 45% of the workforce in 1998-99 had fewer than 10 years experience and the group having less than 5 years experience was the largest group in the experience distribution (28 percent.)

Figure 2.1 Changes in Public School Enrollments and the Teaching Workforce



The public school teaching workforce grew from 57,629 to 62,741 teachers, or 8.9 percent, between the 1995-96 and the 1998-99 school years. The four-year teacher employment growth rate (8.9 percent) was more than twice the student enrollment growth rate (3.8 percent). There are a variety of possible explanations for the more rapid growth rate of the teaching workforce. One factor might be increased staffing requirements associated with the Individuals with Disabilities Act (IDEA). As we will see below (Figure 2.5), employment of special education teachers did grow faster than the total teaching workforce (12.1 percent versus 8.9 percent), but this can explain less than one-half a percentage point of the gap in growth rates.

Another possible explanation is growth in the number of part-time teachers. In this chart, and throughout this report, we are report analyses of the entire teaching workforce, which includes part-time teachers. We conducted a separate analysis of the changes in the full-time equivalent (FTE) teaching workforce and discovered that the FTE teaching workforce grew from 57,014 in 1994-95 to 62,125 in 1998-99. The FTE growth rate was 9.0 percent, which is slightly higher than the overall growth rate.

Finally, it should be noted that the Outstanding Schools Act of 1993 increased the amount of state aid available to Missouri's public schools by more than 25% during the past five years. It is logical to believe that a large portion of this funding increase would be invested in teachers. Other possible explanations, which we have not fully explored, include policy incentives to reduce class size, disproportionately large growth in early elementary-aged enrollments, and the growth in various specialized teaching categories.

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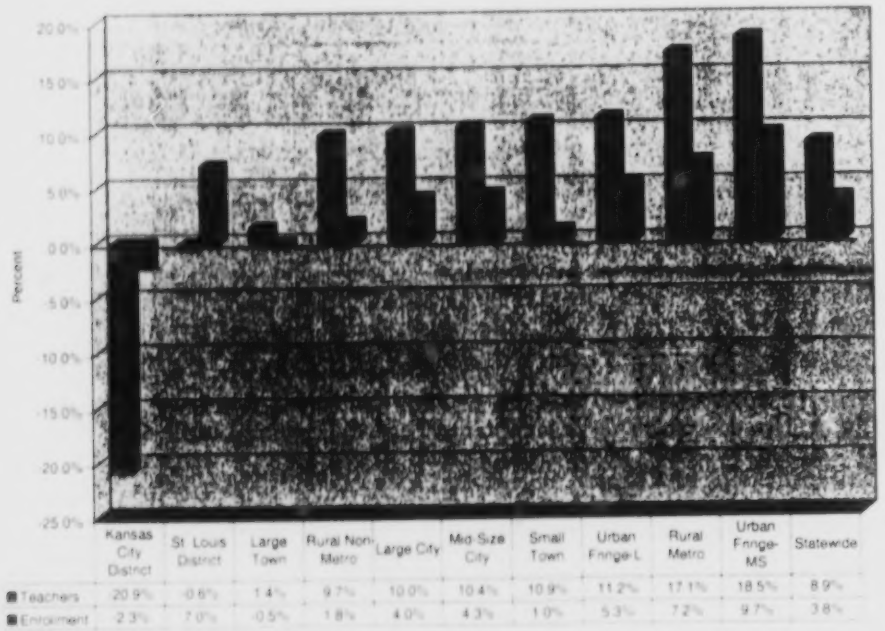
Figure 2.2 Percent Change in Public School Enrollments and the Teaching Workforce Between 1994-95 and 1998-99 by Census Classification



	Kansas City District	St. Louis District	Large Town	Rural Non-Metro	Large City	Mid-Size City	Small Town	Urban Fringe-L	Rural Metro	Urban Fringe-MS	Statewide
Teachers	-20.9%	-0.6%	1.4%	9.7%	10.0%	10.4%	10.9%	11.2%	17.1%	18.5%	8.9%
Enrollment	-2.3%	7.0%	-0.5%	1.8%	4.0%	4.3%	1.0%	5.3%	7.2%	9.7%	3.8%

The public school teaching workforce grew faster than enrollments in most types of communities. Two notable exceptions were observed, both in the state's urban districts. First, in the St. Louis Public Schools, the number of teachers fell by 0.6 percent and enrollments grew by seven percent. Secondly, in the Kansas City Public Schools an observed 2.3 percent enrollment decrease was greatly exceeded by an almost 21 percent decline in the number of teachers. This large decline in the teacher workforce in the Kansas City Public Schools is an obvious anomaly and may be related to changes associated with the settlement of the desegregation case.

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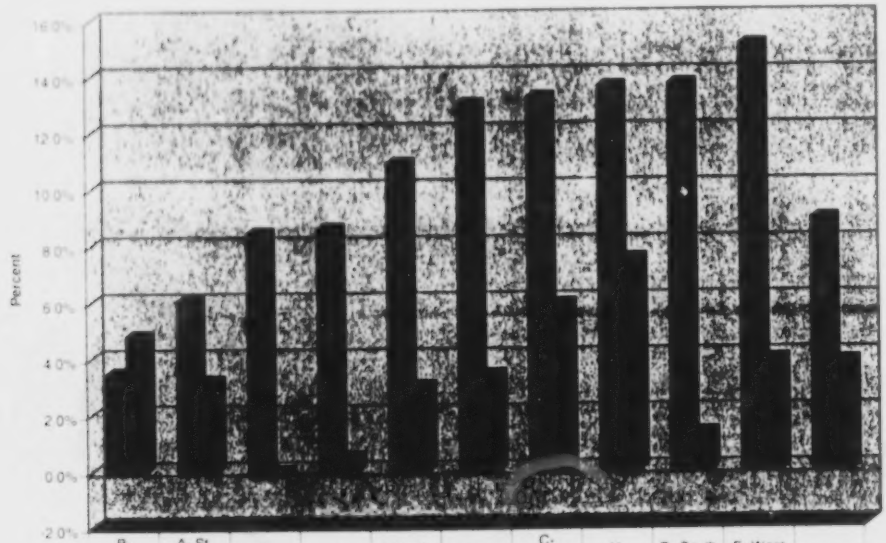
Figure 2.3. Percent Change in Enrollments and Teachers by DESE Supervisory Area: 1994-95 to 1998-99



	B- Kansas City Area	A- St Louis Area	E- Southeast	J- Northeast	I- North Central	D- Central	C- Southwest	H- Northeast	G- South Central	F- West Central	Statewide
Teachers	3.5%	6.0%	8.4%	8.6%	10.9%	13.0%	13.2%	13.6%	13.7%	15.1%	8.9%
Enrollment	4.8%	3.2%	0.2%	0.5%	3.0%	3.4%	5.9%	7.5%	1.3%	3.9%	3.8%

With the exception of the Kansas City Area, the growth rate of teacher employment exceeded the growth rate of student enrollments in all of the DESE supervisory areas. Moreover, there does not appear to be a consistent relationship between teacher growth and enrollment growth across the regions. Some regions with above average teacher employment growth have below average enrollment growth, and vice-versa.

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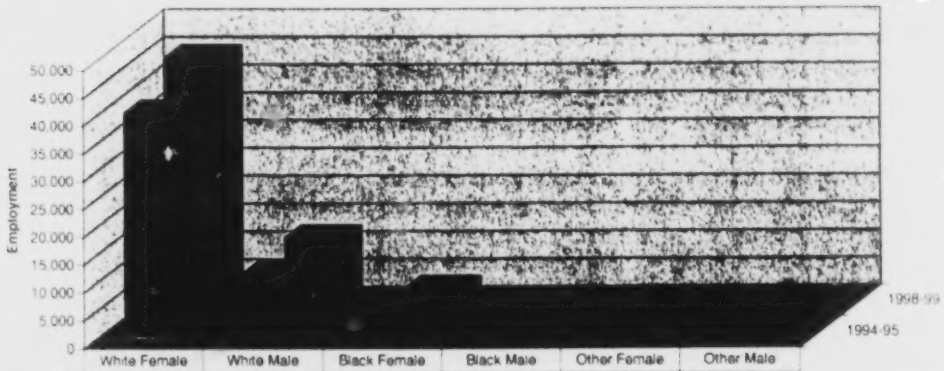
Figure 2.4 Public School Teacher Demographic Characteristics



	White Female	White Male	Black Female	Black Male	Other Female	Other Male
1994-95	40,733	12,107	3,566	838	277	108
1998-99	45,160	12,743	3,534	883	314	107

White females continue to comprise the largest share (72%) of the teaching workforce, followed by white males (20%), black females (6%), and black males (1.4%). Other minorities (Hispanics, Asians, and native Americans) account for less than one percent of the workforce.

The number of black female teachers fell by roughly one percent over the five-year period, while the number of black male teachers rose by 5.3 percent. However, the proportion of black teachers fell from 7.6% of the teaching workforce in 1994-95 to 7.0% of the teaching workforce in 1998-99.

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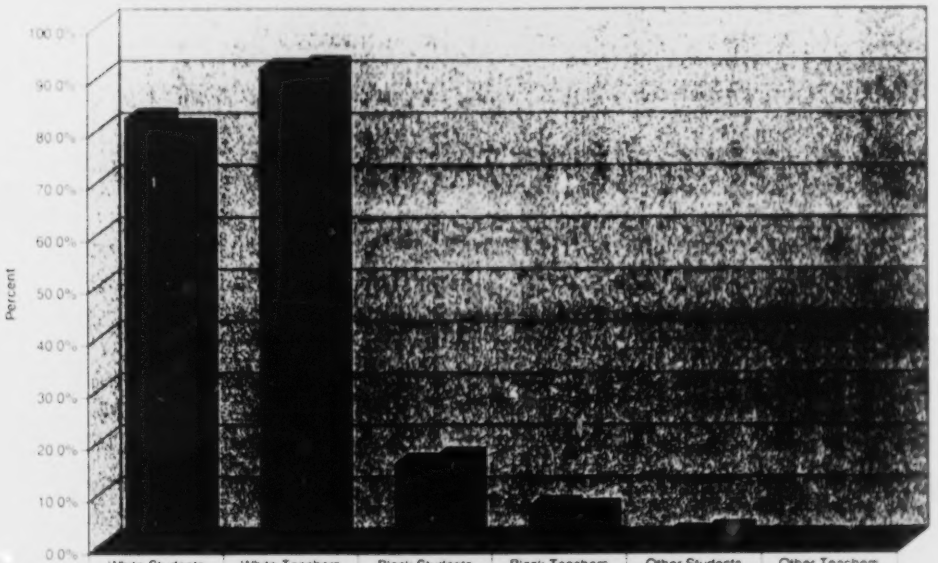
Figure 2.5 Race of Public School Students and Teachers



	White Students	White Teachers	Black Students	Black Teachers	Other Students	Other Teachers
1994-95	82.2%	91.7%	15.8%	7.6%	2.1%	0.7%
1998-99	80.2%	92.3%	17.0%	7.0%	2.8%	0.7%

Figures 2.5 shows the proportion of student enrollments and teachers by race. The data show a notable disparity between the racial composition of the teaching workforce and the racial composition of enrolled students. In 1994-95, for example, the black share of enrollments was 15.8 percent whereas black teachers made up only 7.6 percent of the public school teaching workforce.

The disparity between the racial composition of the student population and the teacher workforce tended to widen over the five-year period of this study. By 1998-99 the share of black students had increased to 17.0 percent whereas the share of black teachers fell to 7.0 percent. A similar widening of the gap between the proportion of students in other racial categories and the proportion of teachers in those racial groups also occurred as the overall percent of the public school teaching workforce made up of white teachers increased.

In 1994-95, approximately 95% of the black teacher workforce was concentrated in the two urban school districts and the Urban Fringe Large City census classification. The distribution of black teachers across those three units was as follows: Kansas City school district (25.2%); St. Louis school district (45.8%); and, Urban Fringe - Large Cities classification (24%).

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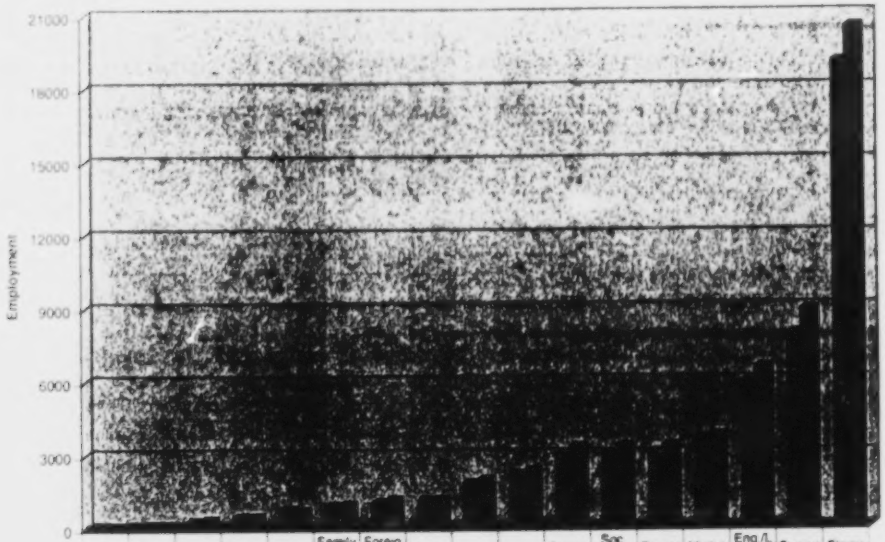
Figure 2.6 Public School Teachers by Field



	Health Occ	Marketing	Agriculture	Trades Indust	Indust Tech	Family Con Sc	Foreign Lang	Business	Art	Music	Science	Soc Studies	Physical Ed	Mathematics	Eng /Lan Arts	Special Ed	Elementary
1994-95	72	154	307	488	799	949	1073	1170	1866	2209	3063	3084	3113	3671	6012	7969	19101
1998-99	84	163	364	478	723	964	1175	1189	2008	2361	3348	3353	3376	3798	6587	8931	20518

Elementary school teachers comprise the largest group of teachers, accounting for 32.7% of the 1998-99 teaching workforce. The next largest group is special education (14.2%), followed by various academic fields. (Not shown in the figure are teachers classified as having Miscellaneous assignments and teachers with Non-classroom teaching assignments.)

The teaching workforce in all fields grew over this five-year interval; however the largest growth rate among fields comprising a significant number of teachers occurred for teachers of special education (12.1%), language arts (9.6%), and science (9.3%), while the growth of elementary teachers was 7.4%. These patterns suggest that the increase in student enrollments included a significant proportion of elementary-aged students and that other increases in the teacher workforce are accounted for by increases in subject specialty teachers.

The demographic characteristics of Missouri's 1998-99 public school teaching force by teaching field is presented in Table 2.1 on the following page.

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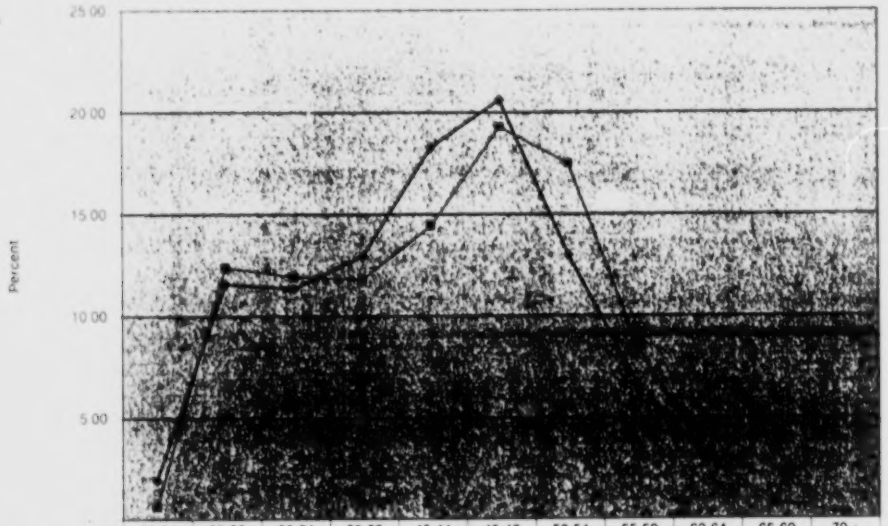
Table 2.1: Race and Gender of Missouri Public School Teachers 1998-99 by Teaching Field

Teaching Field	White Female	White Male	Black Female	Black Male	Other[1] Female	Other[1] Male	Total
Agriculture	44	320	0	0	0	0	364
Art	1487	404	59	44	0	0	1994
Business	932	187	66	2	2	4	1193
Elementary	17767	1049	1472	128	104	0	20520
Eng./Lang. Arts	5237	806	459	43	33	9	6587
Family Con. Sc.	894	5	61	1	3	8	972
Foreign Lang.	905	160	22	9	66	0	1162
Health Occ	79	2	3	0	0	13	97
Industrial Tech.	17	661	0	39	0	6	723
Marketing	80	75	6	1	1	0	163
Mathematics	2346	1159	176	86	12	19	3798
Miscellaneous	1817	700	151	96	7	7	2778
Music	1450	743	90	65	8	5	2361
Non-Classroom	270	181	65	20	6	1	543
Physical Ed.	1254	1871	92	149	5	5	3376
Science	1612	1536	125	49	21	5	3348
Social Studies	1299	1838	104	93	2	17	3353
Special Ed.	7615	635	581	51	42	7	8931
Trades Industrial	46	420	2	7	1	2	478
Total	45151	12752	3534	883	313	108	62741

[1] Includes Hispanic, Native American, and Asian/Pacific Islander categories

Figure 2.7 Missouri Public School Teachers by Age Group



	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70 +
1994-95	1 94	11 55	11 33	12 93	18 28	20 59	12 98	6 54	2 92	0 76	0 19
1998-99	0 59	12 36	11 89	11 77	14 39	19 26	17 47	8 40	2 93	0 74	0 21

The age distribution of the teaching workforce in 1995 was bimodal, with a large share of teachers in their forties and early fifties and another large group of recent hires between the ages of twenty-five and thirty. The plot shows the shift to the right of the mode as the larger number of teacher's in the older groups move through the five-year time span.

The shift of the age curve reflects the aging of the teaching workforce and the flattening of the distribution suggests that the older teachers are accounting for a smaller portion of the teaching workforce, primarily because they are exiting the profession. For example, the teachers in the 45-49 age group in 1995 accounted for over 20% of the teaching workforce. That same group of teachers shifted to the 50-54 age group in 1999 where they accounted for 17.5% of the teaching workforce. At the same time, the proportion of the teaching workforce accounted for by teachers less than 40 years old actually declined from 37.8% to 36.6%.

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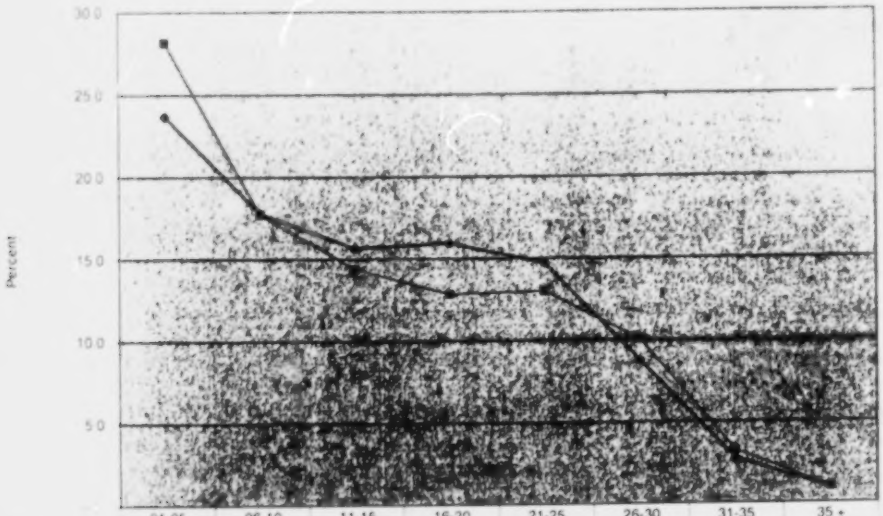
Figure 2.7b Missouri Public School Teachers by Years of Experience



	01-05	06-10	11-15	16-20	21-25	26-30	31-35	35 +
1994-95	23.6	17.8	15.6	15.9	14.7	8.7	2.7	0.9
1998-99	28.1	17.7	14.4	12.8	13.0	10.0	3.2	0.9

Because retirements and teacher quality are often associated with experience levels, an interesting question is whether the distribution of teaching experience is similar to the distribution of teachers by age group. This chart illustrates quite clearly that the distributions are not similar. A significant and growing proportion of the teaching workforce is comprised of teachers with less than 10 years experience (41.4 % and 45.8% in 1994-95 and 1998-99, respectively.) The 4.4 percent increase translates into nearly 2,500 additional teachers with relatively little experience.

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3. Labor Market Dynamics: Turnover, Exits, and New Hires

Estimating the recruitment and retention needs for public school teachers requires that we model and predict the way that individuals enter and exit the teaching workforce as well as estimate the number of new teachers needed to meet enrollment growth. This section of the report presents information on the flows into and out of Missouri's public school teacher workforce.

Definitions and Procedures

Many of the studies of teacher supply and demand conducted during the past decade or so examined the changes in the teaching workforce that occurred from one year to the next. Using a one-year window provides much useful information about labor market dynamics. However, many teachers take short, temporary leaves from the workforce – often associated with childbearing. In this report, we are interested in getting a longer-term perspective on changes in the teaching workforce and the labor market. For that reason, we adopted a five-year window. Specifically, we chose to examine the changes that occurred in the teaching workforce during the five-year interval from the 1994-95 to the 1998-99 school years.

We estimated the flows into and out of the public school teacher labor market by measuring the changes in the teacher population, by school district, between the base year of 1994-95 and the last available year of 1998-99. We estimated changes in the size and composition of the teaching workforce by analyzing educator data provided to the Department through Core Data by public school districts. We identified all of the public school teachers in 1994-95 and then compared those individuals to the public school teachers identified in 1998-99. Changes in each public school district were identified and then aggregated for reporting purposes.

The following operational definitions of teachers' labor market behavior are reflected in the charts and tables presented in this section of the report.

New Teachers — Teachers who were in the teacher population in 1998-99, but not in the teacher population in 1994-95, and whose public education experience was less than four years.

Returning Teachers — Teachers who were in the teacher population in 1998-99, but not in the teacher population in 1994-95, and whose public education experience was greater than or equal to four years.

District Changers — Teachers employed in Missouri public schools in 1994-95 and 1998-99, but who were in a different school district in 1998-99.

Exiters — Teachers in the teacher population in 1994-95, but NOT in 1998-99. (Note: This definition will under-estimate the total number of teachers who exited the public schools during the study period. Teachers who entered the public schools in 1995-96 or after and subsequently left the teaching workforce by 1998-99 will not be included in the exiters count.)

Available information about the retirement status of exited teachers was sought from the Missouri Public School Retirement System (PSRS). Exiting teachers were categorized into the following categories; retired, withdrew (closed their retirement account by taking a lump sum payment), died, or unknown.

Teachers in the Kansas City and St. Louis school districts are not part of the PSRS. The researchers estimated an econometric model to predict retirements using demographic and experience variables. This model was used to estimate the number of retired teachers among St. Louis and Kansas City exiters. These estimates were used when preparing summary statistics for Census Classifications only. Figures that present exiting teacher information by other classifications will not reflect the estimates of St. Louis and Kansas City retirements. (The exit unknown category in Kansas City and St. Louis will include retired teachers who did not close or begin drawing payments from a PSRS account.)

Major Findings

- The labor market for public school teachers in Missouri is dynamic, with large numbers of teachers entering and exiting the workforce every year.

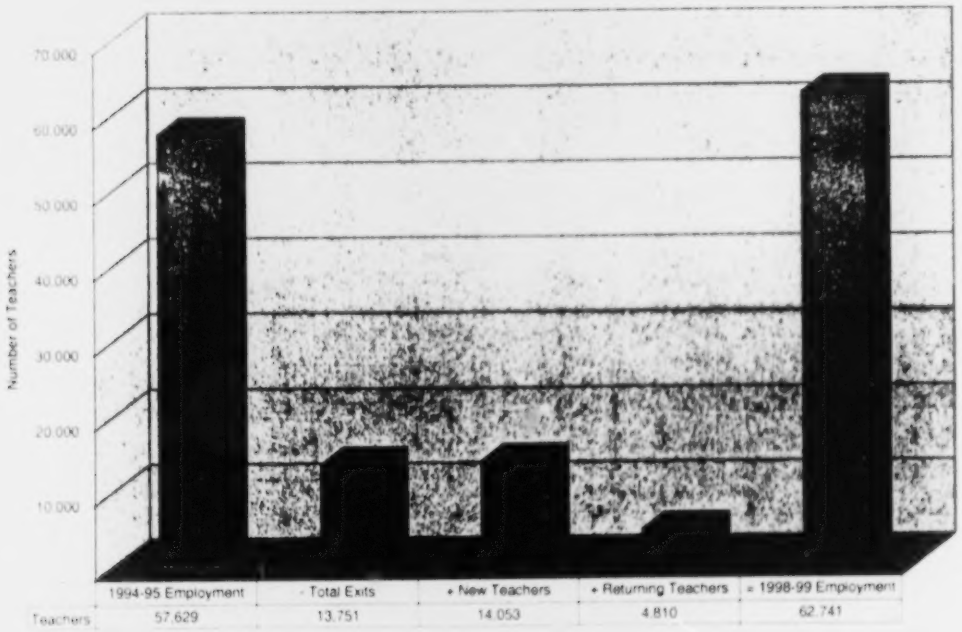
- Overall hiring rates over the 5-year period were relatively high (over 50% in certain types of communities and geographic regions). Most hiring by districts arises as a result of teacher turnover and not from net growth in the number of teaching positions.

- Male teachers exit the teaching workforce at a higher rate than female teachers across all community types. The exit rates for black teachers is higher than the exit rate for white teachers in certain types of communities (primarily rural Missouri and towns) and lower than the exit rate for white teachers in other types of communities (primarily large cities).

- The pattern of exit rates for different age groups is consistent with prior research, i.e., younger teachers leave at a relatively high rate (around 8% per year) and then there is a decline and stabilization of the exit rate for teachers between 30 and 50. After age 50, the exit rate begins to increase again, peaking at nearly 20% per year for the 65 to 69 age group. This pattern is similar for different experience cohorts, though the percentage of relatively inexperienced teachers who exit teaching, i.e., those with fewer than 10 years of experience, is nearly 15 percentage points lower than the exit rates of teachers less than 30 years old.

- There appears to be a discernable pattern in the inter-district movement of teachers, with teachers leaving urban and rural districts for positions in suburban type districts.

Figure 3.1: Statewide Public School Teacher Employment Flows, 1994-95 to 1998-99



The labor market for teachers is fluid, with large flows into and out of the workforce from year to year. The above graph illustrates these labor force dynamics for the entire state for the five-year study period. (Dividing any of the middle three columns by four will provide an estimate of the corresponding average annual change in the teaching workforce.)

As noted earlier, the overall teaching workforce grew by 5,057 teachers or 8.9 percent over the five-year period from 1994-95 to 1998-99. This modest net increase, however, masked much larger gross flows into and out of the workforce. During this period, 13,751 teachers, or 23.8 percent of the 1994-95 workforce, left the payrolls of Missouri public schools. The vacancies created by these exiting teachers and the net increase in the teacher workforce were filled with 14,053 teachers who were new to public school classrooms and 4,810 teachers with prior public school experience to yield a 1998-99 workforce of 62,741 public school teachers.

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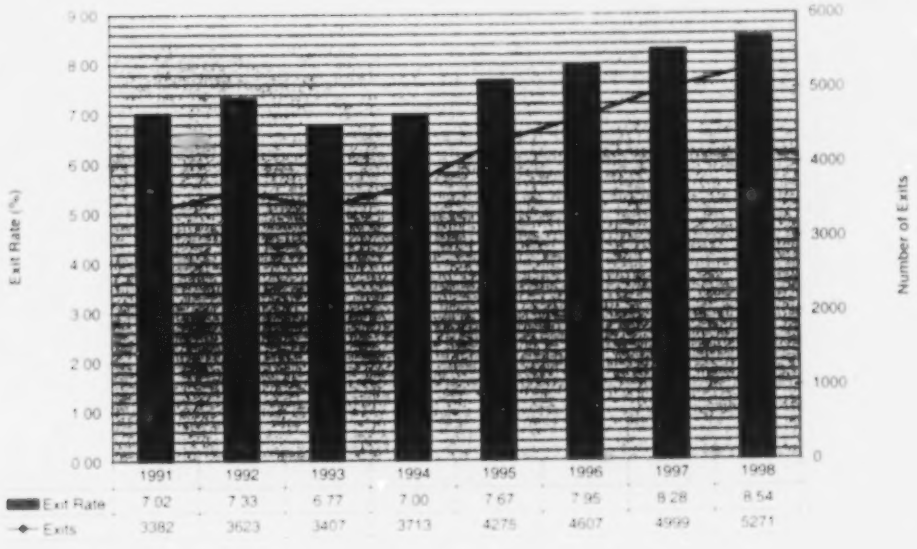
Fig. 3.1a: Level, rate, and trend of teacher exits from Missouri public schools



The above chart shows the level and trend of teacher exits from Missouri public schools. The bars report the exits in each year as a percent of the workforce. The line graph reports the total number of exits. Thus, between the 1990-91 and the 1991-92 school year, 3,382 teachers left the teaching workforce. These teachers represented 7.02 percent of the 1990-91 workforce. By 1997-98 the number of exits had increased to 5271, and the rate increased to 8.54 percent. As we have seen in an earlier chart (Figure 3.1), many of these exiting teachers will return to public school classrooms in subsequent years. Over the five year period which is the focus of this study, the ratio of returning to exiting teachers was roughly one-third, in other words, for every three teachers who left the classroom, one would return in subsequent years.

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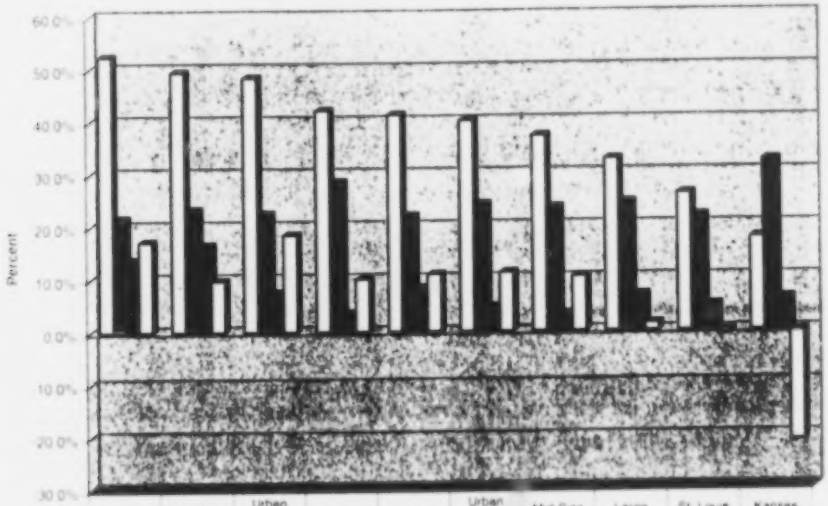
Figure 3.2: Teacher Turnover and Employment Growth in Missouri Public School Districts, 1994-95 to 1998-99 – By Census Classification



	Rural Metro	Rural Non-Metro	Urban Fringe Medium	Large City	Small Town	Urban Fringe Large City	Mid-Size City	Large Town	St. Louis District	Kansas City District
Total Hires	52.3%	49.4%	48.3%	42.1%	41.3%	40.1%	37.2%	32.7%	26.1%	17.7%
Exited Teaching	21.6%	23.2%	22.4%	28.5%	22.0%	24.2%	23.5%	24.5%	21.9%	32.5%
Changed District	13.7%	16.4%	7.5%	3.5%	8.3%	4.7%	3.3%	6.9%	4.9%	6.1%
Net Growth Rate	17.1%	9.7%	18.5%	10.0%	10.9%	11.2%	10.4%	1.4%	-0.6%	-20.9%

When teachers leave a school district they are usually replaced. The dominant factor explaining teacher hiring is not net growth of the teaching workforce; rather it is teacher turnover. Even if the size of the teaching workforce is stable in a district, teacher turnover implies that the district is hiring new teachers. The first bar for each classification shows total hiring as a proportion of the 1994-95 teacher workforce. The middle two bars for each classification show the two sources of teacher turnover: teachers who leave Missouri public schools and teachers who move from one district to another. The last bar shows net employment growth.

With the exception of the Kansas City school district, total hiring in all types of communities was significant, though it varied for different classifications. The highest hiring rate occurred in districts in the Rural Metropolitan classification (e.g., Clinton, Grandview R-II, Raymore-Peculiar) while the lowest rate occurred in the St. Louis school district, excluding Kansas City which experienced a large decline in the size of the teaching workforce.

Teacher turnover is by far the most important factor in teacher hiring needs in the public school districts in every classification. Only in Urban Fringe Medium City districts and Rural Metropolitan districts does net growth of the teaching workforce approach the contribution of teacher turnover to total hiring.

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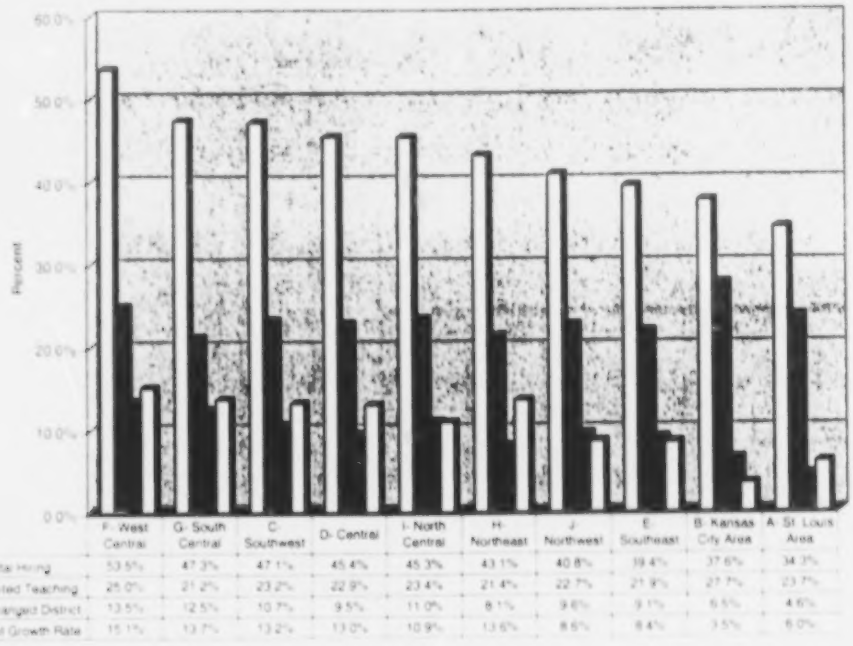
Figure 3.3: Teacher Turnover and Employment Growth in Missouri Public School Districts, 1994-95 to 1998-99 – By DESE Supervisory Area



	F- West Central	G- South Central	C- Southwest	D- Central	I- North Central	H- Northeast	J- Northwest	E- Southeast	B- Kansas City Area	A- St. Louis Area
Total Hiring	53.5%	47.3%	47.1%	45.4%	45.3%	43.1%	40.8%	39.4%	37.6%	34.3%
Exited Teaching	25.0%	21.2%	23.2%	22.9%	23.4%	21.4%	22.7%	21.9%	21.7%	23.7%
Changed District	13.5%	12.5%	10.7%	9.5%	11.0%	8.1%	9.6%	9.1%	9.5%	4.6%
Net Growth Rate	15.1%	13.7%	13.2%	13.0%	10.9%	13.6%	8.6%	8.4%	3.5%	6.0%

Figure 3.3 shows the distribution of teacher hiring needs over the five-year study period by region. The largest hiring rate was in West Central districts (53.5 percent), followed by South Central (47.3 percent) and Southwest (47.1 percent). These Supervisory Areas also had the largest net growth in their teaching workforce. The lowest hiring rate was in the St. Louis area (34.3 percent), which also experienced a below-average rate of net growth (6.0 percent).

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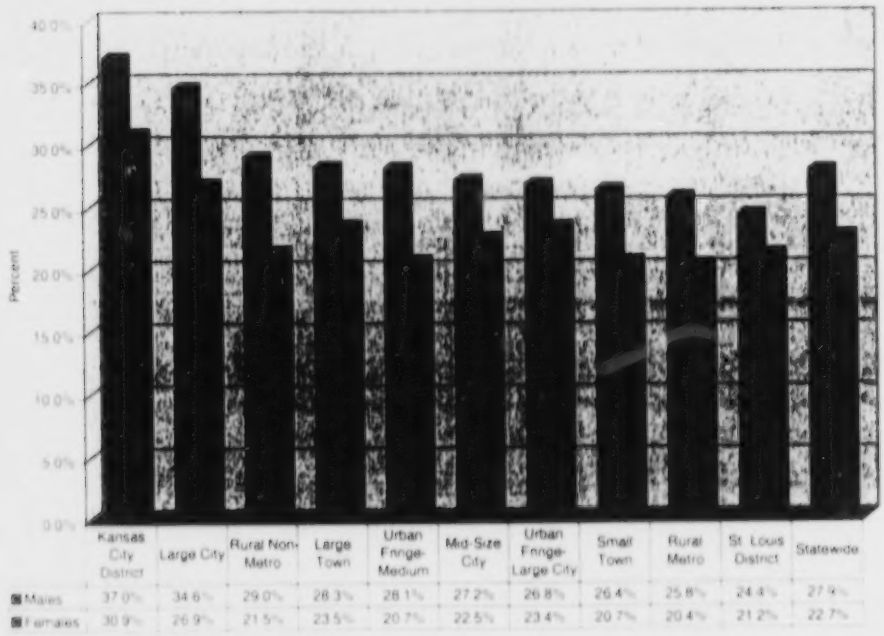
Figure 3.4: Public School Teacher Exit Rates by Gender and Census Classification



	Kansas City District	Large City	Rural Non-Metro	Large Town	Urban Fringe-Medium	Mid-Size City	Urban Fringe-Large City	Small Town	Rural Metro	St. Louis District	Statewide
Males	37.0%	34.6%	29.0%	28.3%	28.1%	27.2%	26.8%	26.4%	25.8%	24.4%	27.9%
Females	30.9%	26.9%	21.5%	23.5%	20.7%	22.5%	23.4%	20.7%	20.4%	21.2%	22.7%

Both male and female teachers exit public school classrooms at a relatively high rate in all census categories, though that rate is consistently higher for men. This finding is somewhat surprising, given the assumption that women leave teaching for periods of time to bear and raise children. However, other opportunities for males in the larger labor market may provide additional incentives for men to leave the ranks of public school teachers at a higher rate than their female colleagues.

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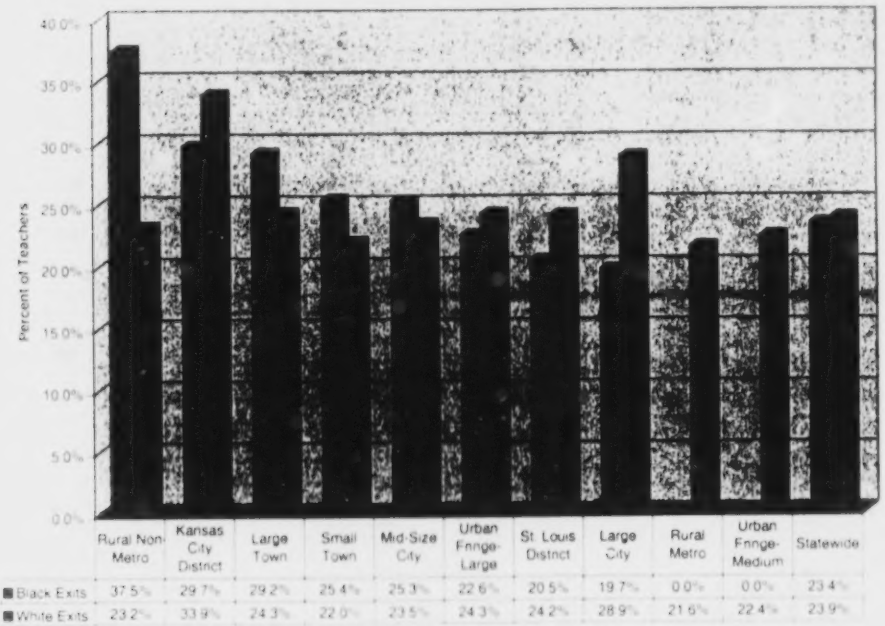
Figure 3.5: Public School Teacher Exits by Race and Census Classification



	Rural Non-Metro	Kansas City District	Large Town	Small Town	Mid-Size City	Urban Fringe-Large	St. Louis District	Large City	Rural Metro	Urban Fringe-Medium	Statewide
Black Exits	37.5%	29.7%	29.2%	25.4%	25.3%	22.6%	20.5%	19.7%	0.0%	0.0%	23.4%
White Exits	23.2%	33.9%	24.3%	22.0%	23.5%	24.3%	24.2%	28.9%	21.6%	22.4%	23.9%

The exit rates for white and black teachers statewide are very similar. Geographically, black turnover rates are lower than white turnover rates in large cities and suburbs, but tend to be higher in rural areas. (Note: The two types of communities showing a 0% exit rate for black teachers only employed a combined total of 3 black teachers in 1994-95.)

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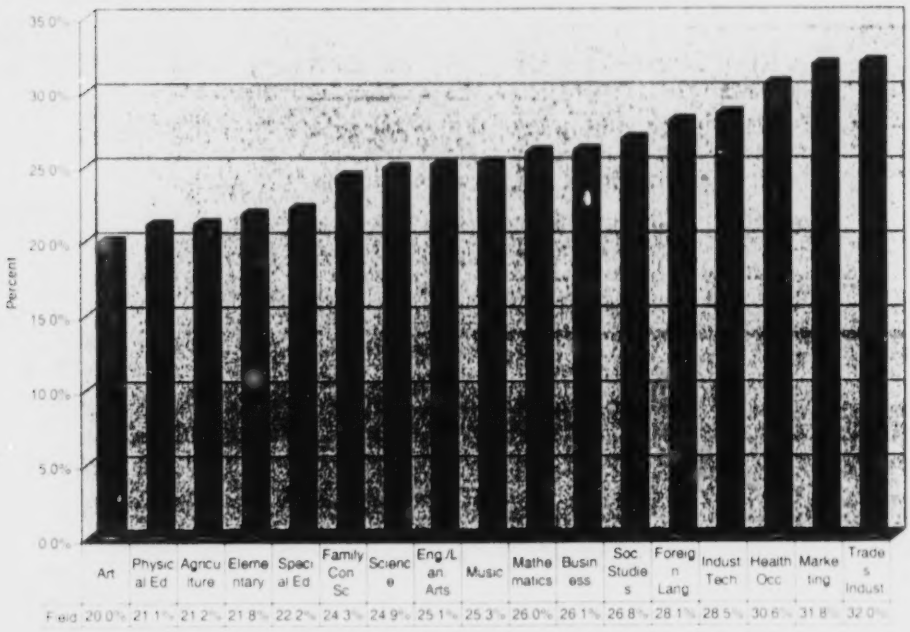
Figure 3.6: Exiting Public School Teachers by Field



This chart presents exit rates by teaching field. The exit rates range from a low of 20.0 percent for Art teachers and 21.2 percent in Physical Education, up to 30.6 and 31.8 percent, respectively, in Health Occupations and Marketing. The exit rates for reported shortage fields such as math, science, and special education are in the middle range, whereas the exit rate for industrial technology (28.5 percent) is well above the average for all teachers (23.8 percent).

Table 3.1 on the following page presents the reasons that teachers in each field left teaching and shows the number of teachers who changed districts between 1994-95 and 1998-99.

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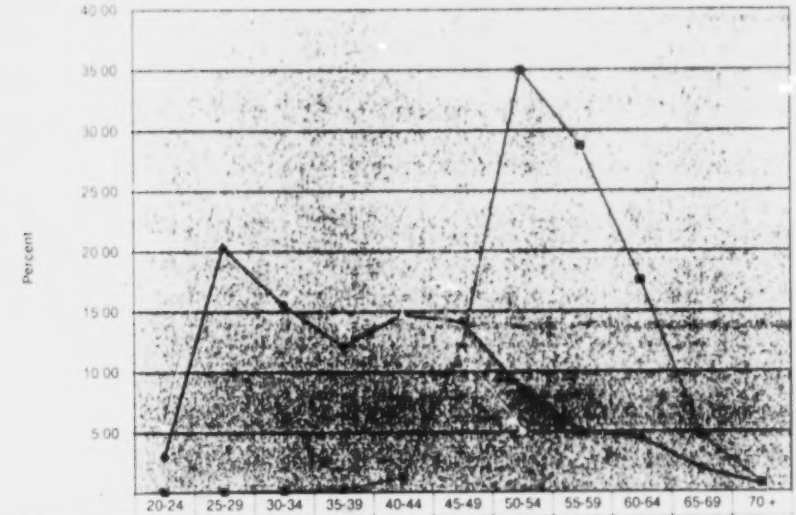
Table 3.1: Teacher Exit Rates by Field and Reason

Field	Teaching in 1994-95	[1]Exited Unknown	Exited Retired	Exited Withdrew	Exited Deceased	Total Exits	Changed District
Agriculture	307	26	14	24	1	65	49
Art	1,866	138	150	79	6	373	139
Business	1,170	103	152	47	3	305	98
Elementary	19,101	1,808	1,575	743	40	4,166	1,057
English/Lang. Arts	6,012	628	544	318	20	1,510	476
Family/Consumer Science.	949	95	98	34	4	231	85
Foreign Lang.	1,073	149	65	84	3	301	87
Health Occ.	72	10	5	7	-	22	1
Industrial. Tech.	799	59	128	41	-	228	78
Marketing	154	21	18	10	-	49	15
Mathematics	3,671	392	365	190	7	954	308
Miscellaneous	2,103	339	162	118	6	625	133
Music	2,209	248	148	158	4	558	289
Non-Classroom	426	124	41	26	3	194	18
Physical Ed.	3,113	233	286	127	11	657	324
Science	3,063	335	257	161	10	763	303
Social Studies	3,084	348	328	141	11	828	237
Special Ed.	7,969	951	281	515	19	1,766	898
Trades Industrial.	488	37	70	47	2	156	8
Statewide Total	57,629	6,044	4,687	2,870	150	13,751	4,603

[1]Exited Unknown category includes an unknown number of retired teachers from the St. Louis and Kansas City Public School districts.

Figure 3.7: Age Distribution of Exiting Public School Teachers



	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70 +
Exit Unknown	2.99	20.27	15.52	12.06	14.68	14.08	8.47	5.03	4.43	1.88	0.59
Retired	0.02	0.04	0.11	0.23	1.24	11.93	34.91	28.66	17.50	4.65	0.70
Withdrew	5.53	26.73	18.23	13.65	14.73	11.72	5.14	2.69	1.22	0.28	0.07

This chart shows the age distribution of teachers who retired or otherwise withdrew from the public school teacher workforce over the five-year period. Teachers who withdrew their retirement accounts or who were categorized as exit unknown were in the younger age groups. Based on the overall analysis of flows into and out of the teaching workforce presented in Figure 3.1, many of the teachers in this latter group presumably will re-enter the public school workforce at some future date. The 50-54 age group accounts for the largest portion of retiring teachers followed by those aged 55-59.

This figure does not include estimates of the number or rate of retiring teachers from St. Louis or Kansas City Public Schools. Those retirees will be included in the Exit Unknown category.

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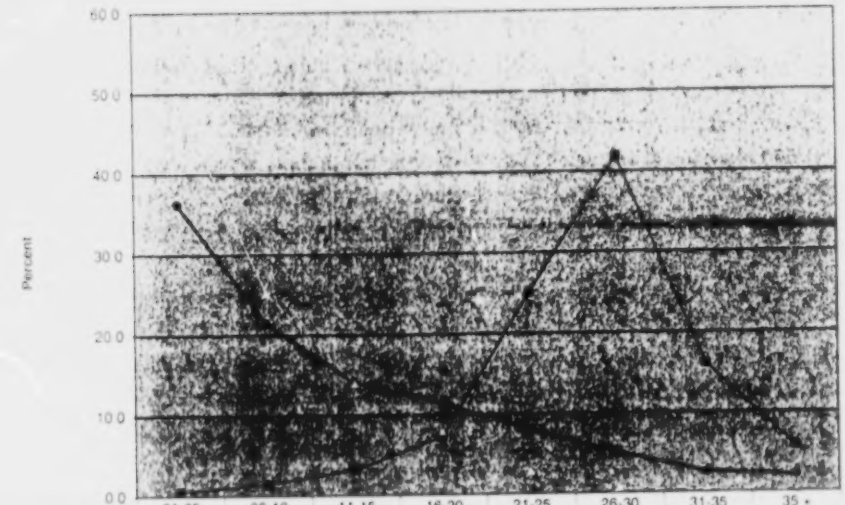
Figure 3.7b: Distribution of Exiting Public School Teachers by Years of Experience



	01-05	06-10	11-15	16-20	21-25	26-30	31-35	35 +
Exit Unknown	36.2	21.3	13.9	11.2	7.9	4.9	2.5	2.1
Retired	0.4	1.3	3.0	7.1	24.8	41.7	15.9	5.7
Withdrew	49.4	25.1	13.9	7.8	2.8	0.6	0.3	0.0

This chart shows the relationship between years of experience and reason for exiting teaching. Of the approximately 2,900 teachers who withdrew their retirement funds from the PSRS, nearly 75 percent had 10 years experience or less. Similarly, more than 50 percent of the more than 6,000 teachers that exited for unknown reasons were in the lower end of the experience distribution. The teachers that accounted for the largest share of the nearly 4,700 retirements were those with 26 to 30 years of experience, followed by teachers with between 21 and 25 years of experience.

This figure does not include estimates of the number or rate of retiring teachers from St. Louis or Kansas City Public Schools. Those retirees will be included in the Exit Unknown category.

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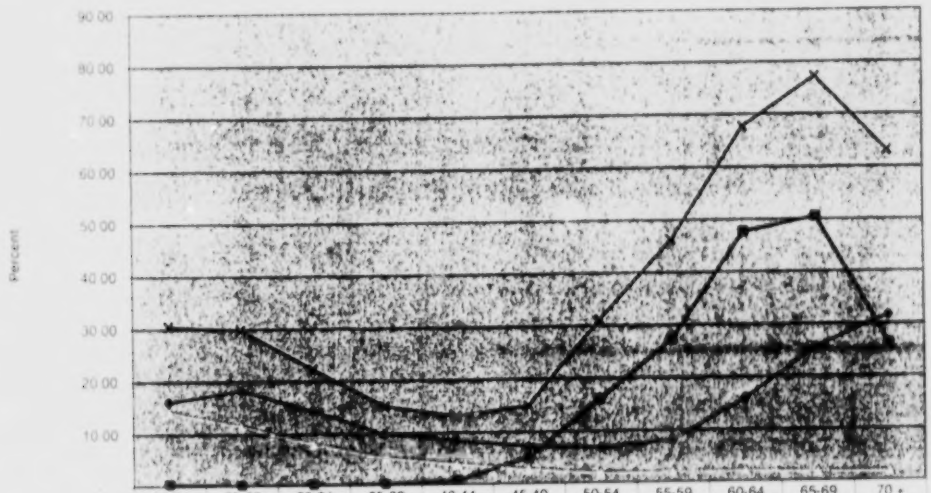
Figure 3.8: Public School Exit Rates by Age Group and Exit Reason



	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70 +
Exit Unknown	15.99	18.18	14.20	9.67	8.33	7.09	6.77	7.97	15.73	25.51	31.53
Retired	0.29	0.03	0.07	0.16	0.68	4.93	15.91	27.16	47.54	50.35	26.19
Withdrew	14.20	11.50	8.00	5.25	4.01	2.83	1.97	2.05	2.09	1.82	1.80
Total Exits	30.5	29.9	22.3	15.2	13.1	15.0	31.1	46.2	67.7	77.2	63.1

This chart shows the proportion of teachers in each age group who exited teaching during the 5-year study period by reason for leaving. The graph of the Total Exits shows the "U-shape" that has been found in many studies of teacher turnover – high exit rates among young teachers, lower rates in the middle years, and rising rates as teachers reach their fifties.

The observed rise in the percent of older teachers in the exit unknown category reflects the fact that we were not able to identify exited teachers in the St. Louis and Kansas City districts who had retired because they belong to a different retirement system. We posit that the majority of the exited teachers in this category who were over the age of 60 are, in fact, retirees from the two city school districts.

Note that while the largest proportion of retirees reported in Figure 3.7 was in the 50-54 age group, in fact, the retirement rate for this group is just 21.9 percent. The retirement rate rises to 35.7 percent for the 55-59 cohort and 48.9 percent for the 60-64 cohort. These rates are important in interpreting the consequences of the relatively large bulge of retiring teachers from the 50-54 age group shown in Figure 3.7. The evidence in this table suggests that these workers will phase into retirement gradually and not create a large surge in hiring for school districts.

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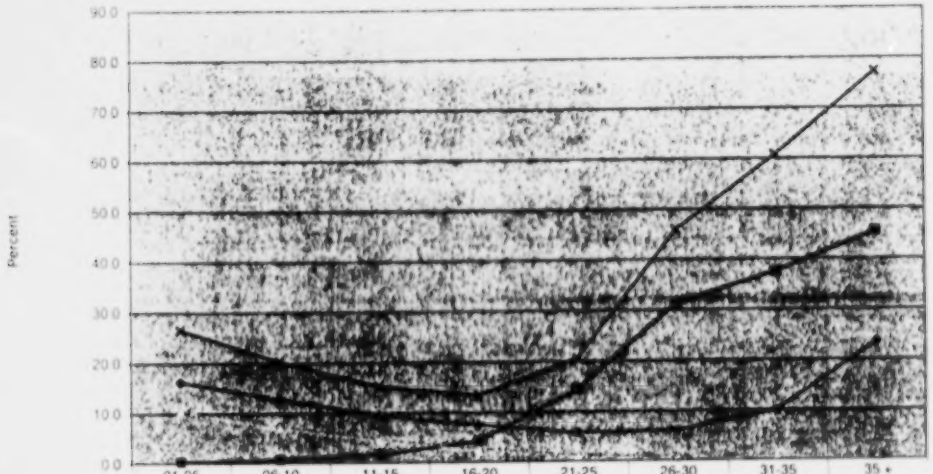
Figure 3.8b: Public School Teacher Exit Rates by Years of Experience and Exit Reason



	01-05	06-10	11-15	16-20	21-25	26-30	31-35	35 +
Exit Unknown	16.1	12.6	9.4	7.4	5.6	5.9	9.8	23.3
Retired	0.1	0.6	1.6	4.1	14.3	31.2	37.4	45.3
Withdrew	10.4	7.0	4.4	2.4	0.9	0.4	0.6	0.2
Total Exits	26.6	20.3	15.4	13.5	20.6	46.0	60.7	77.3

The distribution of exiting public school teachers across years of experience resembles the distribution across age groups. Nearly 30 percent of teachers with less than six years of experience exit the profession, with more than half of them in the exit unknown category. This is similar to the 30 percent rate of exit for teachers who were less than 30 years old shown in Figure 3.8. However, the percentage of teachers in the 6-10 years of experience category who left teaching dropped to just over 20 percent, while the rate for teachers aged 26 to 30 remained stable at just over 30 percent. This suggests that teaching experience has a more stable relationship with teacher turnover than age.

This figure does not include estimates of the number or rate of retiring teachers from St. Louis or Kansas City Public Schools. Those retirees will be included in the Exit Unknown category. Again, we would posit that the increase in the Exit Unknown category among teachers with 31 years and more experience reflects retirees from Kansas City and St. Louis Public Schools.

It is possible to estimate retirements from the ranks of the most experienced public school teachers by multiplying the retirement rates shown in figure 3.8b times the proportion of teachers in each experience category shown in figure 2.7b. The chart on the following page shows those calculations and resulting retirement estimates.

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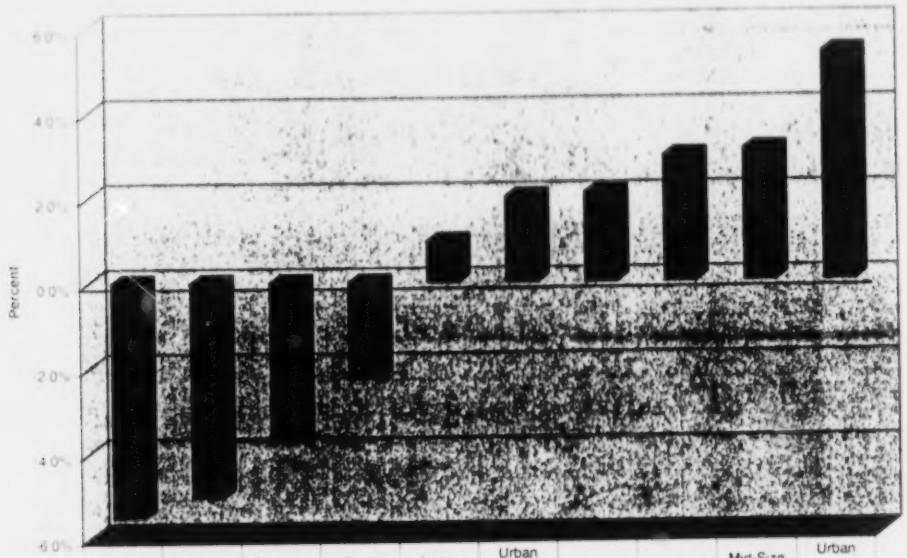
Chart 3.1 Estimating Retirements for Experienced Teachers

26-30 Years Experience	31-35 Years Experience	36 Years + Experience
• 10% of the 1998-99 teaching force, or 6,200 teachers	• 3.2% of the 1998-99 teaching force, or 1,984 teachers	• 0.9% of the 1998-99 teaching force, or 558 teachers
• 31.2% retirement rate over the 5-year period	• 37.4% retirement rate over the 5-year period	• 45.3% retirement rate over the 5-year period
• Estimated Retirees 1,935 teachers	• Estimated retirees 742 teachers	• Estimated retirees 253 teachers

These calculations indicate that even though the retirement rates for teachers with more than 26 years of experience were between 30 and 45 percent, the relatively low proportion of teachers in these groups results in an annualized retirement rate of around 750 teachers. These retirees would represent about 1.25 percent of the 1998-99 teaching workforce. (Remember, the estimates do not include St. Louis and Kansas City Public Schools retirees.)

Retirement rates are influenced by policies and rules that govern pension benefit calculations and when retirees are eligible to receive benefits. Recent changes to both sets of rules may make retirement a more lucrative alternative for experienced teachers whose years of experience and age sum to 80 or higher, thus accelerating retirement rates.

Figure 3.9: Net Inter-District Mobility by Census Classification



	Kansas City District	Rural Non-Metro	St. Louis District	Rural Metro	Large Town	Urban Fringe-Large City	Small Town	Large City	Mid-Size City	Urban Fringe-Medium
Net Gain Rate	-5.5%	-5.0%	-3.7%	-2.2%	1.0%	2.0%	2.1%	2.9%	3.1%	5.4%

This chart shows the overall movement of teachers between school districts (net in-migration) in different types of communities as a percent of the 1994-95 teaching workforce. The values shown in the chart represent the differences between the percent of teachers who moved into districts in a census classification minus the percent of teachers who moved out of districts in the same census classification. Thus, types of communities with negative rates had schools that, as a group, lost more teachers to other Missouri districts than they gained, while those with positive rates gained more than they lost. Kansas City was the largest net loser, with 5.5 percent net out-migration. Urban Fringe Medium Cities were the largest net gainers with 5.4 percent net in-migration. Note that these are changes over four years, not annual rates.

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4. The Supply of Teachers

The analyses in the previous section focused on the demand for public school teachers generated by exits from the workforce and net expansion. This section analyzes the supply of new teachers by drawing on administrative data on newly certified teachers from DESE and education graduates from Missouri public four-year institutions from the Coordinating Board for Higher Education (CBHE).

Definitions and Procedures

Our primary analyses attempted to estimate the annual *additions* to the supply of public school teachers in Missouri. There are multiple perspectives that one might take when trying to estimate the supply of public school teachers. For example, one approach is to count the number of college graduates receiving bachelors degrees in education, but these definitions generally underestimate the total number of newly prepared and certificated teachers. Individuals pursuing alternative preparation or transferring from other states will be omitted from these counts. Because of these and other issues, we chose to estimate the annual additions to the supply of teachers by analyzing entries in the Department's certification records.

We assumed that individuals receiving certificates in calendar year 1998 would be available to the teaching workforce in 1998-99. However, simply counting the number of certificates issued during the year would greatly over-estimate the number of "new" teachers available to the schools because a large number of existing teachers receive new and/or updated certificates in any given year and because many individuals receive multiple certificates. To overcome these potential problems, we removed any person from the list of all 1998 certificate recipients who was also included as a teacher in the Core Data files in 1994-95, 1995-96, and/or 1996-97. We then removed from the remaining certificates duplicate entries for any individual who had received more than one certificate. Individuals who received more than one certificate were classified according to the first certificate issued to them.

We created two groups of new certificate recipients that are used throughout the statistical analyses.

New certificates represent individuals who received a Missouri teaching certificate between 1/1/98 and 12/31/98 and who were not teaching in the state's public schools in the prior three school years. (This group could include individuals whose initial Missouri certificate was issued *before* 1998.) This is an estimate of the total number of credentialed persons added to the potential supply of Missouri public school teachers during 1998 and includes individuals who might be returning to teaching after a hiatus of at least 3 years (1994-95 through 1996-97).

First time certificates represent individuals who received their very first Missouri teaching credential between 1/1/98 and 12/31/98. This is an estimate of the "newly minted teachers" and inter-state transfers who were credentialed to join the Missouri

teaching workforce in 1998. The first-time certificates group is a proper subset of the new certificates group.

We also examined the public school teaching employment of one cohort of public college and university graduates who received bachelors degrees in education. The graduates reported to Missouri's CBHE were matched against the complete list of teachers from the 1995-96 through 1998-99 Core Data files to identify which of the graduates were reported as public school teachers. The results of that analysis are reported for all graduates, math and science graduates, and special education graduates.

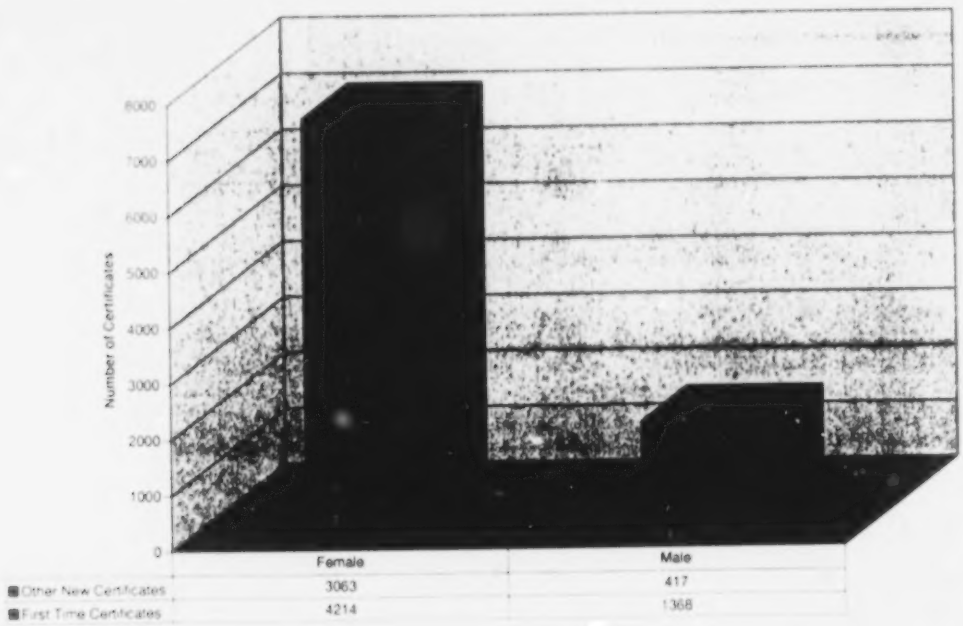
Key Findings

- The gender and teaching fields of new certificate recipients is very similar to the composition of the existing public school teaching workforce. (Race is not included in the certificate file, so we could not examine the racial composition of new certificate recipients.)

- Recent college graduates who receive bachelor's degrees in education from Missouri public and private four-year institutions account for less than one-half the new supply of public school teachers for Missouri schools.

- Only roughly one-half of the education graduates from Missouri public colleges and universities are teaching in Missouri public schools four years after graduation.

Figure 4.1: Newly Certified Teacher Candidates in 1998 by Gender



The gender mix of new teacher candidates mirrors that of the teaching workforce. Females account for 80.5 percent of newly certified teacher candidates and 75.5 percent of first-time candidates. (Candidate race/ethnicity is not consistently recorded in the certification files, so it was not possible to examine the distribution of candidates across this variable.)

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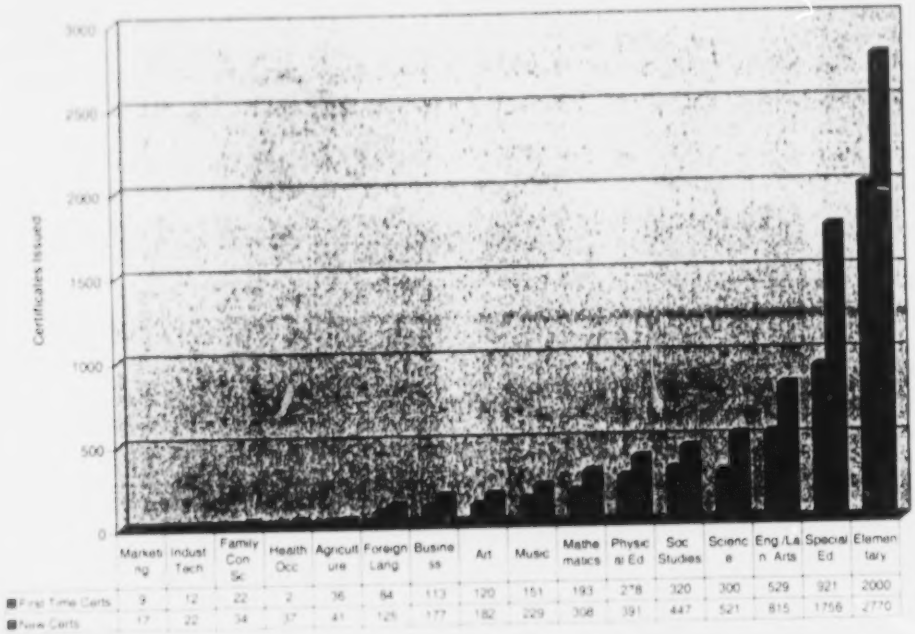
Figure 4.2: Newly Certified Teacher Candidates in 1998 by Field



	Marketing	Indust Tech	Family Con Sc	Health Occ	Agriculture	Foreign Lang	Business	Art	Music	Mathematics	Physical Ed	Soc Studies	Science	Eng /Ln Arts	Special Ed	Elementary
First Time Certs	9	12	22	2	36	84	113	120	151	193	278	320	300	529	921	2000
New Certs	17	22	34	37	41	125	177	182	229	308	391	447	521	815	1756	2770

This chart presents the number of new and first-time certified candidates by field. These are candidates who were newly certified in calendar year 1998, and who were not employed in Missouri public schools between 1994-95 and 1996-97. (Teacher candidates assigned to the Miscellaneous, Non-teaching, and Trades and Industrial education categories have been excluded.)

The largest group by far is elementary, followed by special education, and then English and language arts. (Note: approximately 23% of the persons received new or first-time certificates in more than one field and were classified according to the first certificate they received.)

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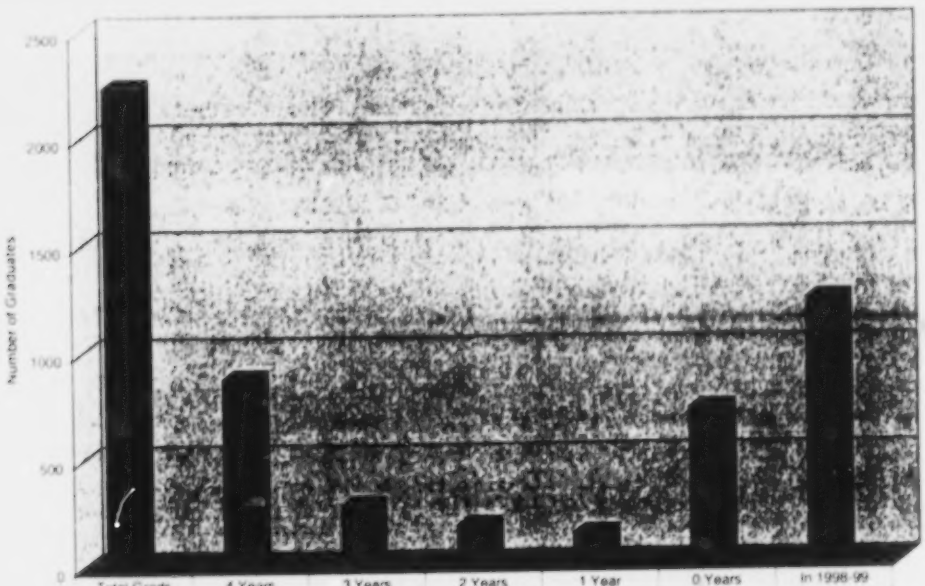
Figure 4.3: Public School Teachers Among 1994-95 Education Graduates from Missouri Public Four Year Institutions



	Total Grads	4 Years	3 Years	2 Years	1 Year	0 Years	In 1998-99
Graduates	2239	877	287	190	149	729	1235
Percent	100%	39%	13%	8%	7%	33%	55%

This chart examines one part of the potential supply of new teachers for Missouri public school classrooms: education majors graduating from Missouri public four-year institutions. During the 1994-95 academic year, 2,239 students graduated from Missouri four-year public institutions with baccalaureate degrees in education. Presumably many of these graduates had some interest in a teaching career, although not all of these graduates necessarily received Missouri teaching certificates.

We looked for these individuals in the Core Data files for each of the next four years (1995-96 through 1998-99) to see how many taught in Missouri public schools. Theoretically, all of these graduates might have taught for four years. In fact, just 877 (39.2 percent) taught for four years, and 729 (32.6 percent) did not teach at all during the subsequent four years. During the 1998-99 school year 1,235 (or 55.2 percent) were teaching in Missouri public schools.

In addition to the 2,239 education majors who graduated from Missouri *public* colleges and universities during the 1994-95 academic year, 838 students graduated with baccalaureate degrees in education from Missouri *private* higher education institutions as well. Unfortunately, the data which would allow determining if those graduates are in the public school teaching work force are not available.

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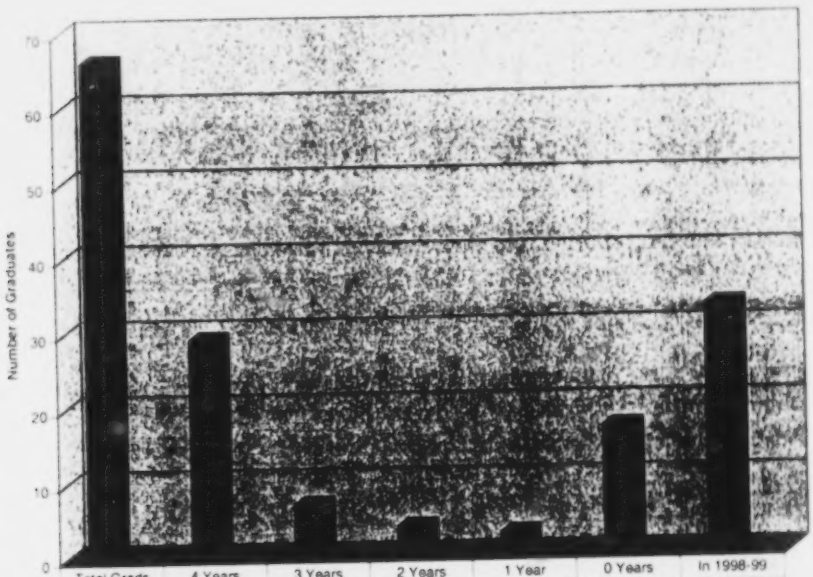
Figure 4.4: Public School Teachers Among 1994-95 Science and Math Education Graduates from Missouri Public Four Year Institutions



	Total Grads	4 Years	3 Years	2 Years	1 Year	0 Years	In 1998-99
Graduates	66	29	7	4	3	17	33
Percent	100%	44%	11%	6%	5%	26%	50%

This table shows that half of all traditionally-prepared math and science teacher candidates who received their education in Missouri's public universities were actually teaching in public schools four years later. Of those who were teaching, 29, or 44% of the graduating cohort, had taught in the public schools for the entire four-year period. Only about one-fourth of those graduates never taught in Missouri's public schools.

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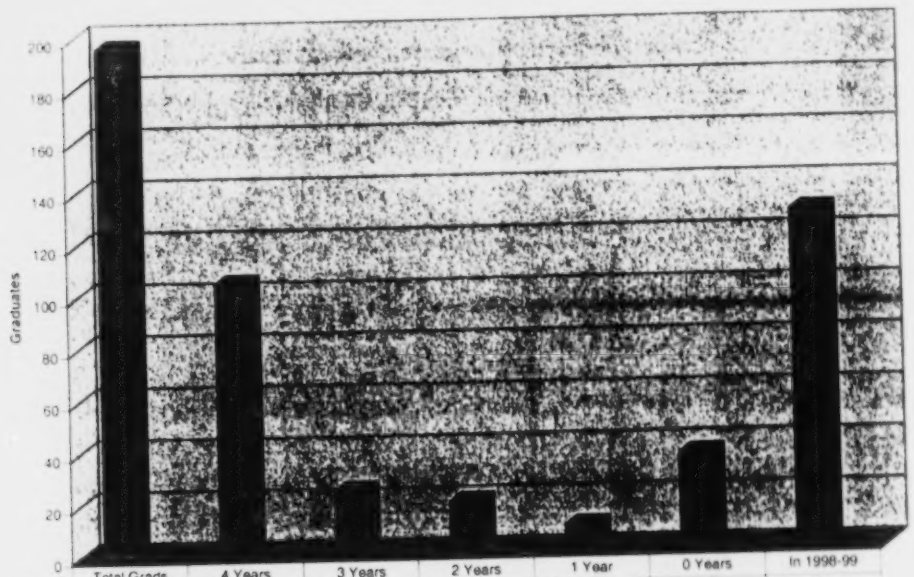
Figure 4.5: Public School Teachers Among 1994-95 Special Education Graduates from Missouri Public Four Year Institutions



	Total Grads	4 Years	3 Years	2 Years	1 Year	0 Years	In 1998-99
Graduates	196	105	25	20	10	37	130
Percent	100%	54%	13%	10%	5%	19%	66%

During the 1994-95 academic year, 196 students majoring in special education graduated from Missouri public four-year institutions. Of these, 105 (53.6 percent) taught for four years, and 37 (18.9 percent) did not teach at all in Missouri public schools. During the 1998-99 school year, 130 of these graduates (66.3 percent) were teaching. The latter percentage is somewhat above the average for all education majors (55.2 percent).

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5. Vacancies and the Supply of Newly Certified Teachers

This section compares vacancies by field with the supply of newly certified teacher candidates. We defined vacancies as positions which school districts filled as a result of exits and net growth. We did not include positions that arose at the district level as a result of the inter-district mobility of teachers. Clearly, those are positions which school districts must fill; however, at the state level they cancel out; one district's hire is another district's exit. We compare these vacancies to the supply of newly certified teacher candidates discussed in Section 4.

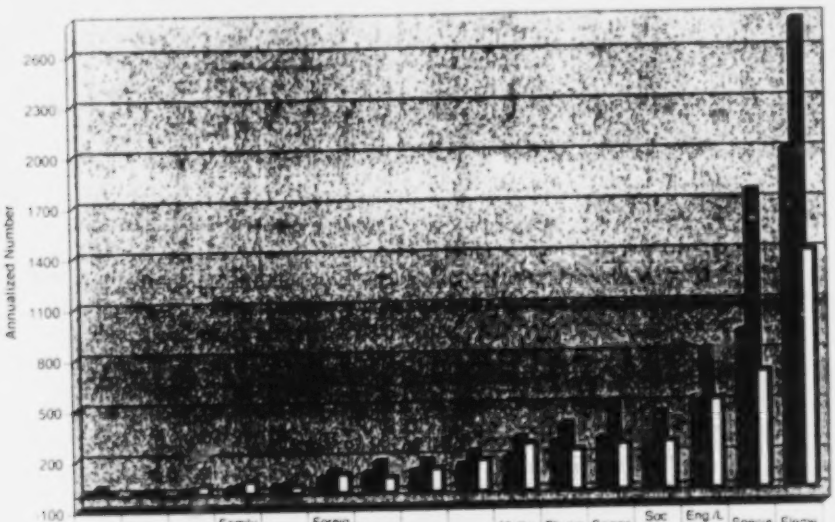
Unfortunately, it is not possible at this time to construct regional measures of supply and demand imbalance. In order to shed light on regional imbalances we plotted data on hiring rates and provisional certification rates of teachers. When schools cannot hire a fully certified teacher to fill a vacancy, they may choose to hire a less than fully certified teacher and attempt to secure a provisional certificate for the candidate by applying to DESE. Thus, comparing the rate of employment of provisionally certified teachers in one group of schools as compared to others may provide information about relative recruitment difficulties.

Major Findings

- In most fields, the number of newly certified teacher candidates exceeds the average annual vacancies by a considerable margin. However, in selected fields, the number of newly certified teacher candidates is less than the average annual vacancies, suggesting real statewide shortages in those fields.

- Types of communities and geographic regions which experienced the highest rates of hiring as a result of teacher turnover and net growth also tended to have the highest rates of provisional certifications in their teaching workforce.

Figure 5.1: Additions to Teacher Supply Compared to Public School Teaching Vacancies by Field



	Health Occ	Marketing	Indust Tech	Family Con Sc	Agricul ture	Foreign Lang	Business	Art	Music	Mathematics	Physical Ed	Science	Soc Studies	Eng./Lan Arts	Special Ed	Elementary
First Time Certs 1998	2	9	12	22	36	94	113	120	151	193	278	300	320	529	921	2000
New Certs 1998	37	17	22	34	41	125	177	182	229	308	391	521	447	815	1756	2770
Annual Vacancies	9	15	38	62	31	101	81	129	178	270	230	262	274	521	682	1395

This chart compares the number of first-time and new certificates issued in 1998 with the average annual vacancies for teachers during the five-year study interval. The annual average vacancies were estimated by adding the total number of exited teachers and the total growth in the number of teachers in each field between 1994-95 and 1998-99 and dividing that sum by four.

The number of new certificates issued exceeded the average annual vacancies in all fields except industrial technology and family and consumer sciences. (It is not surprising that there is anecdotal and survey evidence of difficulties in finding qualified candidates for vacancies in those two fields.) In fact, in most fields the number of new certificates exceeds annual vacancies by 40% or more. It is interesting to note that the ratio of new certificates to average annual vacancies in those fields where school administrators have reported hiring difficulties is around 1.25 and lower. In other words, shortage fields tend to be those where our statistical analysis shows less than a 25% potential surplus based on the number of new certificates issued. These also tend to be the fields where the number of *first-time* certificates issued is approximately equal to the estimated annual vacancies.

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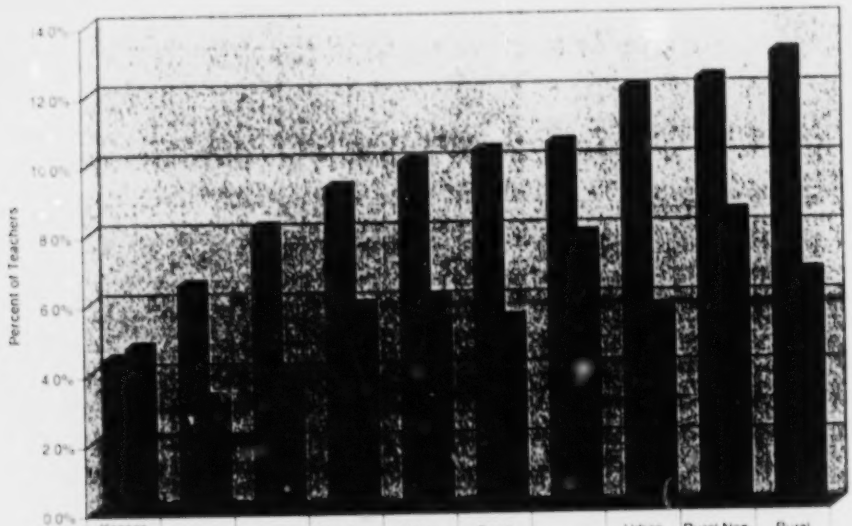
Provisional Certification Rates

When schools cannot recruit fully certified teachers to teach a class they may turn provisionally certified teachers to cover the classes. Provisionally certified teachers are teachers who hold college degrees but who have not completed all the necessary requirements for regular certification in a field. For example, a certified mathematics teacher who teaches four mathematics courses may also teach a course in physics for which she is only provisionally certified. The rate of employment of provisionally certified teachers in a district may thus be an indicator of teacher shortages.

With that in mind, the next two charts plot the percent of teachers in a district during the 1998-99 school year who held a provisional teaching certificate which was recently issued (i.e., 1/97 or later) in at least one field. As the previous example illustrates, this is not the percent of courses or students taught by provisionally certified teachers, since many provisionally certified teachers also hold standard certificates in other fields and teach in those fields. However, this indicator may signal recruitment difficulties. Moreover, organizations such as the National Commission on Teaching and America's Future and Secretary of Education Riley have been critical of the use of emergency or provisionally certified teachers by school districts.

Figure 5.2: Annual Hiring Rates and Teachers with Provisional Certificates by Census Classification



	Kansas City District	St. Louis District	Large Town	Mid-Size City	Urban Fringe-L	Small Town	Large City	Urban Fringe-MS	Rural Non-Metro	Rural Metro
Annual Hiring Rate	4.4%	6.5%	8.2%	9.3%	10.0%	10.3%	10.5%	12.1%	12.4%	13.1%
Percent With Provisionals	4.7%	3.3%	4.0%	5.9%	6.1%	5.5%	7.9%	5.7%	8.4%	6.7%

The percent of teachers holding provisional certificates ranges from a low of 3.3 percent in the St. Louis school district up to 8.4 percent in rural non-metropolitan districts. In many states urban school districts employ above-average shares of emergency or provisionally certified teachers. That does not seem to be the case in Missouri, though the data for this 5-year period may reflect some anomalies. The Kansas City public school district was in a significant retraction in the size of its teaching workforce. The relatively low rate of provisionally certified teachers in the St. Louis public school district may be related to the relatively high rate of full-time substitute teachers employed in that district. There were 331 substitute teachers in the entire state and 210 of them, or 63%, were employed by the St. Louis school district.

On the other hand, rural districts do tend to have higher shares of provisionally certified teachers, which is consistent with findings in other states.

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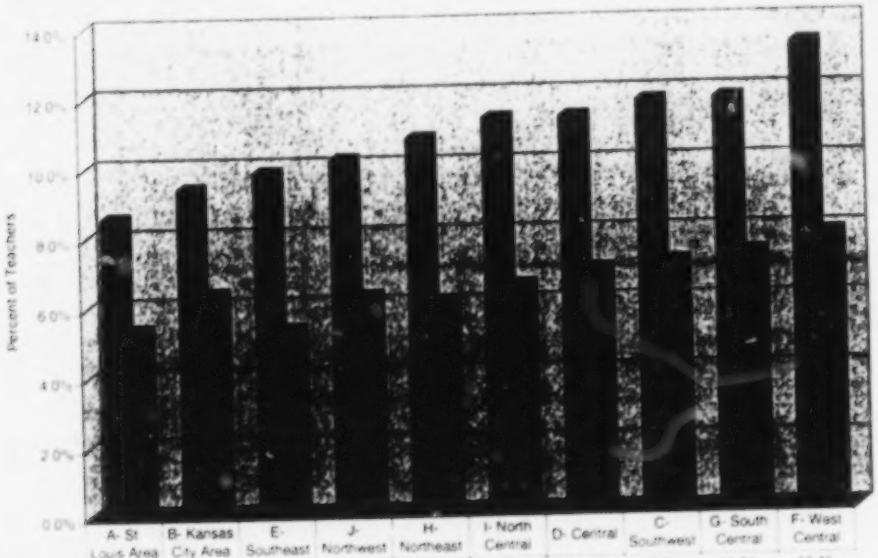
Figure 5.3: Annual Hiring Rates and Teachers with Provisional Certificates by DESE Supervisory Area



	A- St Louis Area	B- Kansas City Area	E- Southeast	J- Northwest	H- Northeast	I- North Central	D- Central	C- Southwest	G- South Central	F- West Central
Annual Hiring Rate	8.2%	9.4%	9.9%	10.2%	10.8%	11.3%	11.4%	11.8%	11.8%	13.4%
Percent With Provisional	5.4%	6.4%	5.4%	6.3%	6.1%	6.5%	7.0%	7.2%	7.4%	7.9%

This chart presents the percent of provisionally certified teachers in the workforce by the regional Supervisory Areas. The rate ranges from a low of 5.4 percent in the Southeast and St. Louis area, up to 7.9 percent in the West Central area. As we observed in the previous chart, overall hiring rates and the percent of provisionally certified teachers appear to be positively related and Supervisory Areas with predominantly rural districts in central Missouri tend to have higher percentages of provisionally certified teachers.

This chart also shows that there are different annual hiring rates. The great differences in the trends observed in the Kansas City area versus the Kansas City public school district may be partially responsible for the one geographic area where the overall trend of more provisional certificates and more hiring does not hold.

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6. Conclusions and Discussion

The statistical analyses of the labor market for Missouri's public school teachers presented in the prior sections of this report provided information about the changes that occurred in the size and composition of the teaching workforce between the 1994-95 and 1998-99 school years. The conclusions and corresponding discussions presented in this section of the report are based on those findings.

1. The labor market for public school teachers is dynamic and complex. Teacher turnover is the biggest contributing factor to school district hiring needs.

Missouri's public school teacher workforce grew nearly 9% over the 5-year study period while student enrollments grew almost 4%. In addition, nearly a one-fourth of all public school teachers left the public schools and were replaced during the same time period and an additional 8% changed school districts. Turnover rates, enrollment and workforce growth rates, and resultant hiring rates varied by type of community, geographic region, and by teaching field.

Teacher hiring rates are dominated by teacher turnover. Figures 3.2 and 3.3 show that two areas experienced hiring rates over the 5-year study period that exceeded 50% of their 1994-95 teaching workforce levels. Of those hires the largest components were associated with teacher turnover, i.e., exits from teaching and inter-district transfers. Any reductions in the rate of exits from the teaching workforce will reduce school districts' need to hire teachers and will reduce the demand for replacement teachers.

The data also show that there is a tendency for the proportion of provisional certifications in a school district to vary with the hiring rate. Figures 5.2 and 5.3 show that regions or similar districts with larger annualized hiring rates also tended to have a larger proportion of their teaching workforce holding provisional certificates. Since the largest contributor to hiring rates is teacher turnover, this suggests that if we can reduce turnover, we might also reduce the number of teachers who hold "emergency" certification.

A "simple" model of teacher supply and demand based on public school enrollment growth, anticipated graduations from teacher preparation programs, and predicted retirement rates does not seem warranted. The disproportionate enrollment and workforce growth rates suggest that some additional understanding of the relationship between the number of students and the demand for teachers in Missouri's public schools needs to be developed. Any model will need to be geographically specific, though information in this report based on type of community sheds some light on characteristics and problems that may be consistently experienced by similar types of schools.

2. **The statistical analyses conducted in this study can neither support nor discount the crisis that has been predicted from large numbers of pending teacher retirements.**

The age of Missouri's public school teaching workforce is skewed toward the older end of the working-life distribution. Figure 2.7 shows that nearly 50% of the teaching workforce was 45 years old or older in the fall of 1998. Figure 3.8 shows the proportion of teachers in each age group that left teaching between 1994-95 and 1998-99. A common method of estimating the impact of the age of the workforce is to apply the observed exit rates for teachers of various ages and determine the associated replacement needs. Generally, it is assumed that the replacements will be made from the supply of "newly minted teachers", i.e., the group of young teachers who recently received their initial teaching certificate. This "pipeline" analysis suggests that retirements and other exits from older groups of teachers will be replaced by younger teachers and that the younger age group must be large enough to meet replacement needs created by older teacher exits.

The following chart shows the estimated number of teachers in each age group in 1994-95 and applies the observed exit rate to those numbers to derive the estimated number of teachers by age group that we would expect to see in the 1998-99 teaching workforce. The teachers in 1994-95 who were in the 40-44 age group who remain in the teaching workforce become the teachers in the 45-49 age group in 1998-99. Each age group is similarly advanced to the next age group.

Table 6.1 Predicted and Actual Size of Selected Teacher Age Cohorts

	Age Group				
	40-44	**45-49**	**50-54**	**55-59**	**60-64**
Number of Teachers in 1994-95	10546	11871	7492	3746	
Number Exited	1382	1781	2330	1671	
		↘	↘	↘	↘
Predicted Number of Teachers in 1998-99		9164	10090	5162	2075
Predicted percent of the teaching workforce		14.6	16.1	8.2	3.3
Actual percent of the teaching workforce		19.3	17.5	8.4	2.9

The simulation of aging and exiting from the teaching workforce shows that the proportion of the workforce composed of older teachers in 1998-99 is larger than one would predict by just applying exit rates. This indicates that the "simple" pipeline model of younger teachers replacing older teachers does not necessarily hold true. It appears that there were actually significant additions to the teaching workforce in the 45-49 and

50-54 age groups. This finding is consistent with the data shown in Figure 3.1 which indicate that nearly 5,000 teachers "returned" to teaching in Missouri public schools between 1994-95 and 1998-99.

What this means is that it is difficult to predict replacement needs due to retirements. Simply applying the exit rate for each age group did not result in an accurate estimate of the size of the teaching workforce in the older age groups. This suggests that there is a "latent" supply of teachers that might be drawn upon to replace teachers who retire or exit the classroom for other reasons.

3. The administrative data available for analysis indicated potential state-wide shortages for teachers in selected fields.

The analyses conducted for this report were able to suggest that teacher shortages may have occurred in several teaching fields during the 5-year study period. Figure 5.1 indicated that the number of new certificates issued to individuals not already in the public school teaching force in 1998 was less than the average annual vacancies for Family and Consumer Science and Industrial Technology teachers. These findings suggest that the state's public school districts would have found it difficult to find qualified teachers in 1998-99 to fill relevant teaching vacancies. (This seemingly impossible finding probably is an artifact of comparing average vacancies across the study period to actual certificates issued to persons not already teaching in the public schools in a particular year.) The small number of 1994-95 science and mathematics education graduates from the state's public 4-year colleges and universities is another finding that suggests fields where teacher shortages may exist.

Beyond these statewide indicators of potential shortages for general teaching fields, it is not possible to determine other shortage areas from the available data and corresponding analyses that were conducted. The two primary sources of information about teachers and the potential supply of teachers in Missouri's public schools are the Core Data files and the teacher certification files maintained by the Department. A secondary source of information about the potential supply of teachers is the record of public college and university graduates with education degrees. These data were not collected to measure or predict teacher supply and demand. Rather they were collected to fulfill other regulatory and administrative functions and are historical in nature. While the data can be used to analyze selected characteristics of the teaching workforce and the ways it may change over time, they really cannot inform policy makers about specific instances of teacher shortages or unfilled vacancies. Those data simply are not collected as a part of the existing administrative databases.

It is tempting to try to analyze and reanalyze the available data to find statistics or measures that support others' conclusions and warnings about impending teacher shortages or anecdotal and other self-reported evidence of difficulties experienced when trying to hire teachers. It is possible that some measures or indices could be constructed that might seem related to other evidence of teacher shortages. For example, comparing the data represented in Figure 5.1 to other reported evidence of teacher shortages suggests

that schools are experiencing difficulty in finding qualified teacher candidates in fields where the ratio of new certificates to average annual vacancies is 1.25 or less (foreign language = 1.24, mathematics = 1.14, music = 1.3.) However, suggesting that those indices are in fact proxy measures of teacher shortages is not warranted until further research comparing measures of shortage to the measures constructed from administrative data has determined that there truly *is* a relationship.

Finally, one potentially promising way to use state administrative data to assess teacher shortages by region would be to use Geographic Information System (GIS) methodologies to match the location of college graduates and/or certificate recipients to school districts or identified within-state regions. This technology might help to identify potential teacher shortages by teaching fields for specific geographic areas. In addition, it would also be possible to develop longitudinal data from DESE and CBHE administrative files to examine the training and recruitment of teacher in rural school districts. For example, to what extent are teachers in rural school districts high school graduates of the same or nearby districts?

4. The demographic composition of Missouri's teaching force does not reflect that of the student population.

Figure 2.4 reveals a profession increasingly dominated by white women. Overall, females (of all races) accounted for 77.3% and white teachers for 91.6% of Missouri's public school teaching workforce in 1994-95. These measures increased to 78.1% female and 92.2% white over the 5-year study period.

Both the supply of teacher candidates and the exit rates of teachers contributed to the growth in the imbalance of gender in Missouri's public school teaching workforce. Figure 3.4 shows that male teachers left public school classrooms faster than females in all types of communities. Figure 3.5 shows that black teachers actually exited teaching at a slightly lower rate than their white counterparts (23.4% versus 23.9%), though the relative exit rates varied by type of community.

Types of Districts Where Whites Exited at a Higher Rate than Blacks

- Kansas City School District (4.2 percentage points higher)
- "large city" school districts (9.2 percentage points higher)
- St. Louis School District (3.7 percentage points higher)
- "urban-fringe large" (1.7 percentage points higher)
- rural metro (21.6 percentage points higher)
- urban fringe, medium (22.4 percentage points higher)

Types of Districts Where Blacks Exited at a Higher Rate than Whites

- "large town" districts, (4.9 percentage points higher)
- "mid-size city" districts, (1.8 percentage points higher)
- "rural" districts (14.3 percentage points higher)

- "small town" districts (3.4 percentage points higher)

5. Two-thirds of Missouri public school districts are supplying experienced teachers to one-third of the state's public districts in the form of inter-district moves.

Figure 3.9 reveals that school districts in certain types of communities lose teachers through inter-district transfers, while school districts in other types of communities gain teachers. The types of communities in the "loser" categories account for approximately 66% of Missouri's school districts, of which 99% are in rural communities, and the other 1% being the St. Louis City and Kansas City public school districts. The types of communities in the "winner" categories represent the other 34% of the state's school districts and are described in more detail below.

- "large towns": Cape Girardeau and Jefferson City
- "urban fringe, large city": contains most of what one would consider the suburban districts surrounding St. Louis and Kansas City
- "large cities": four, all surrounding Kansas City (Center, Hickman Mills, North Kansas City, and Park Hill in Platte Co.)
- "mid-size cities": Columbia, Joplin, St. Charles, St. Joseph, and Springfield
- "urban fringe, mid-size cities": nine of the eleven communities listed surround Springfield
- "small towns": the 92 communities listed are distributed throughout the state.

With the exception of "small towns," rural and inner-city Missouri school districts are providing teachers to the suburbs surrounding Kansas City and St. Louis, and the communities of and surrounding Cape Girardeau, Jefferson City, Columbia, Joplin, St. Joseph, St. Charles, and especially Springfield. (See Appendix 1 for a complete listing of communities in each census classification)

6. A significant portion of the individuals who complete traditional teacher training and licensing requirements either choose to not teach in Missouri's public schools or choose to leave public school classrooms in less than 5 years.

Figure 4.3 reveals that approximately one-third of the roughly 2,200 graduates who obtained a bachelor's degree in education in 1994-95 chose not to enter Missouri's public school classrooms within 4 years of their graduation from college. The good news from this statistic is that 2 out of 3 of the graduates did in fact teach in the public schools within 4 years of their graduation and more than 80% of those teachers were in public school classrooms 4 years after graduation. However, it still is sobering that 45% of the individuals who received bachelors degrees in education in 1994-95 from Missouri's public universities were not teaching in the state's public schools 4 years later.

When one looks at exiters from Missouri public classrooms for reasons other than retirement (see Figures 2.7 and 3.8), one finds that 2,412 teachers between the ages of 20 and 29 left the public schools between 1994-95 and 1998-99. This represented about 4%

of the total 1994-95 public school teaching workforce or an annual average loss of about 1% of the workforce through the attrition of these young and relatively inexperienced teachers. However, the 20-29 age group is not necessarily a good proxy for recent college graduates. The attrition rate of our sample of public university graduates who did enter the teaching work force is less than 18% significantly lower than the 30% attrition rates found for all teachers in the 20-29 year old age group.

Assuming that the one year sample reflected in Figure 4.3 and related discussions is representative of the graduation and employment rates of Missouri's universities, the production of new teacher candidates from the traditional 4-year college degree pathway would be approximately 3,000 per year. Approximately 2,000 would become teachers and more than 1,600 would remain in the profession more than 3 years. These numbers were not sufficient to accommodate the more than 3,100 teachers per year that left the state's public schools. However, the exited teachers were, in fact replaced, and an additional 5,000+ teachers were added to the workforce.

If the new college graduates couldn't account for teacher hiring in public schools, where did all of these teachers come from? First, bachelors degree recipients do not represent the only path to certification in Missouri. It is likely that some new certificate recipients applied with a master's degree, or received a bachelors degree in a field other than education and then completed additional coursework to meet certification requirements. Also, approximately 23% of the first-time and other new certificates issued in 1998 were to individuals recommended by out of state institutions. This suggests inter-state mobility of the teaching workforce that often is overlooked in studies of teacher supply and demand.

In short, the teacher labor market did provide teachers to accommodate the majority of teacher turnover and growth experienced between 1994-95 and 1998-99. However, a significant portion of the supply of that labor appears to have come from nontraditional sources. These findings again underscore the inherent complexities in the labor market for public school teachers.

References

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Appendix I
Census Classifications

Kansas City
KANSAS CITY 33

Large City
CENTER 58
HICKMAN MILLS C-1
NORTH KANSAS CITY 74
PARK HILL

Large Town
CAPE GIRARDEAU 63
COLE CO. R-II
JEFFERSON CITY
NELL HOLCOMB R-IV

Mid-Size City
COLUMBIA 93
FRANCIS HOWELL R-III
JOPLIN R-VIII
SPRINGFIELD R-XII
ST. CHARLES CO. R-V
ST. CHARLES R-VI
ST. JOSEPH

Rural Metro
ASH GROVE R-IV
AVENUE CITY R-IX
AVILLA R-XIII
BILLINGS R-IV
BOONE CO. R-IV
BUCHANAN CO. R-IV
CASS CO. R-V
CHADWICK R-I
CLEVER R-V
CLINTON CO. R-III
CONCORDIA R-II
DIAMOND R-IV
DREXEL R-IV
DUNKLIN R-V
EAST BUCHANAN CO. C-1
EAST LYNNE 40
EAST NEWTON CO. R-VI
ELSBERRY R-II
FAIR GROVE R-X
FORDLAND R-III
FRANKLIN CO. R-II
GRAIN VALLEY R-V
GRANDVIEW R-II
GREENE CO. R-VIII
HARDIN-CENTRAL C-2
HARRISBURG R-VIII
HILLSBORO R-III
JASPER CO. R-V
KEARNEY R-I
LATHROP R-II
LAWSON R-XIV
LONE JACK C-6
LONEDELL R-XIV
MARION C. EARLY R-V
MID-BUCHANAN CO. R-V
MIDWAY R-I
MISSOURI CITY 56
NEW HAVEN
NIANGUA R-V
NORTH ANDREW CO. R-VI
NORTH PLATTE CO. R-I
NORTHWEST R-I
ORRICK R-XI
RAYMORE-PECULIAR R-II
SANTA FE R-X
SARCOXIE R-II
SENECA R-VII
SEYMOUR R-II
SHERWOOD CASS R-VIII
SILEX R-I
SOUTHERN BOONE CO. R-I
SPARTA R-III
SPOKANE R-VII
STEWARTSVILLE C-2
STRAFFORD R-VI
STRASBURG C-3
STURGEON R-V
WALNUT GROVE R-V
WELLINGTON-NAPOLEON R-I
WEST PLATTE CO. R-II
WILLARD R-II
WINFIELD R-IV
WRIGHT CITY R-II

Rural Non-Metro
ADAIR CO. R-I
ADAIR CO. R-II
ADRIAN R-III
ADVANCE R-IV
ALBANY R-III
ALTENBURG 48
ALTON R-IV
APPLETON CITY R-II
ARCADIA VALLEY R-II
ATLANTA C-3
BAKERSFIELD R-IV
BELL CITY R-II
BELLEVIEW R-III
BERNIE R-XIII
BEVIER C-4
BISMARCK R-V
BLACKWATER R-II
BLOOMFIELD R-XIV
BLUE EYE R-V
BOSWORTH R-V
BRADLEYVILLE R-I
BRAYMER C-4
BRECKENRIDGE R-I
BRONAUGH R-VII
BRUNSWICK R-II
BUCKLIN R-II
BUNKER R-III
CABOOL R-IV
CAINSVILLE R-I
CALHOUN R-VIII
CALLAO C-8
CALLAWAY CO. R-III
CAMDEN CO. R-II
CAMPBELL R-II
CASSVILLE R-IV
CENTERVILLE R-I
CHILHOWEE R-IV
CLARK CO. R-I
CLARKSBURG C-2
CLARKTON C-4
CLEARWATER R-I
CLIMAX SPRINGS R-IV

Appendix I:
Census Classifications

Rural Non-Metro

COLE CAMP R-I
COLE CO. R-I
COLE CO. R-V
COMMUNITY R-VI
COOPER CO. C-4
COOPER CO. R-IV
COOTER R-IV
COUCH R-I
COWGILL R-VI
CRAIG R-III
CRANE R-III
CRAWFORD CO. R-I
CROCKER R-II
DADEVILLE R-II
DALLAS CO. R-I
DELTA C-7
DELTA R-V
DIXON R-I
DONIPHAN R-I
DORA R-III
EAST CARTER CO. R-II
EMINENCE R-I
EVERTON R-III
EXETER R-VI
FAIR PLAY R-II
FAIRFAX R-III
FORSYTH R-III
GAINESVILLE R-V
GALENA R-II
GALLATIN R-V
GASCONADE C-4
GASCONADE CO. R-II
GENTRY CO. R-II
GIDEON 37
GILLIAM C-4
GILMAN CITY R-IV
GOLDEN CITY R-III
GORIN R-III
GREEN CITY R-I
GREEN RIDGE R-VIII
GREENFIELD R-IV
GREENVILLE R-II
GRUNDY CO. R-V
HALE R-I
HALFWAY R-III
HAMILTON R-II
HARTVILLE R-II
HERMITAGE R-IV
HICKORY CO. R-I
HIGBEE R-VIII
HIGH POINT R-III
HOLCOMB R-III
HOLDEN R-III
HOLLIDAY C-2
HOLT CO. R-II
HOUSTON R-I
HOWARD CO. R-II
HUDSON R-IX
HUMANSVILLE R-IV
HUME R-VIII
HURLEY R-I
IBERIA R-V
IRON CO. C-4
JEFFERSON C-123
JOHNSON CO. R-VII
KELSO C-7
KEYTESVILLE R-III
KING CITY R-I
KINGSTON 42
KINGSTON K-14
KINGSVILLE R-I
KIRBYVILLE R-VI
KNOB NOSTER R-VIII
KNOX CO. R-I
LA MONTE R-IV
LA PLATA R-II
LACLEDE CO. R-I
LAKELAND R-III
LAQUEY R-V
LAREDO R-VII
LEETON R-X
LEOPOLD R-III
LESTERVILLE R-IV
LEWIS CO. C-1
LIBERAL R-II
LICKING R-VIII
LINCOLN R-II
LINN CO. R-I
LIVINGSTON CO. R-III
LOCKWOOD R-I
LURAY 33
LUTIE R-VI
MACKS CREEK R-V
MACON CO. R-IV
MADISON C-3
MALTA BEND R-V
MANSFIELD R-IV
MARIES CO. R-I
MARIES CO. R-II
MARION CO. R-II
MARIONVILLE R-IX
MARK TWAIN R-VIII
MARQUAND-ZION R-VI
MAYSVILLE R-I
MCDONALD CO. R-I
MEADOW HEIGHTS R-II
MEADVILLE R-IV
MIAMI R-I
MIDDLE GROVE C-1
MILAN C-2
MILLER CO. R-III
MILLER R-II
MIRABILE C-1
MONITEAU CO. C-1
MONITEAU CO. R-V
MONITEAU CO. R-VI
MONTGOMERY CO. R-II
MONTROSE R-XIV
MORGAN CO. R-I
MORGAN CO. R-II
MOUNTAIN VIEW-
BIRCH TREE
NAYLOR R-II
NEELYVILLE R-IV
NEW FRANKLIN R-I
NEW YORK R-IV
NEWBURG R-II
NEWTOWN-HARRIS R-III
NODAWAY-HOLT R-VII
NORBORNE R-VIII
NORTH CALLAWAY CO.
R-I
NORTH DAVIESS R-III
NORTH HARRISON R-III
NORTH MERCER CO.
R-III
NORTH NODAWAY CO.
R-VI
NORTH PEMISCOT CO.
R-I
NORTHEAST NODAWAY
CO. R...
NORTHEAST RANDOLPH
CO.
NORTHEAST VERNON
CO. R-...
NORTHWESTERN R-I
NORWOOD R-I

Appendix I:
Census Classifications

Rural Non-Metro

OAK RIDGE R-VI
ORAN R-III
OREARVILLE R-IV
OREGON-HOWELL R-III
OSAGE CO. R-I
OSAGE CO. R-II
OSAGE CO. R-III
OSBORN R-O
OSCEOLA
OTTERVILLE R-VI
PARIS R-II
PATTONSBURG R-II
PETTIS CO. R-V
PHELPS CO. R-III
PIERCE CITY R-VI
PIKE CO. R-III
PLATO R-V
PLEASANT HOPE R-VI
POLO R-VII
PRAIRIE HOME R-V
PRINCETON R-V
PULASKI CO. R-IV
PURDY R-II
PUTNAM CO. R-I
PUXICO R-VIII
RALLS CO. R-II
RAYMONDVILLE R-VII
REEDS SPRING R-IV
RENICK R-V
REVERE C-3
RICH HILL R-IV
RICHLAND R-I
RICHWOODS R-VII
RIDGEWAY R-V
RIPLEY CO. R-III
RIPLEY CO. R-IV
RISCO R-II
ROCK PORT R-II
ROSCOE C-1
SALISBURY R-IV
SCHOOL OF THE OSAGE R-I
SCHUYLER CO. R-I
SCOTLAND CO. R-I
SCOTT CO. R-IV
SENATH-HORNERSVILLE C-8
SHAWNEE R-III
SHELBY CO. C-1
SHELBY CO. R-IV
SHELDON R-VIII
SHELL KNOB 78
SKYLINE R-II
SLATER
SMITHTON R-VI
SOUTH CALLAWAY CO. R-II
SOUTH HOLT CO. R-I
SOUTH IRON CO. R-I
SOUTH NODAWAY CO. R-IV
SOUTH PEMISCOT CO. R-V
SOUTHERN REYNOLDS CO. R
SOUTHLAND C-9
SOUTHWEST LIVINGSTON CO
SOUTHWEST R-V
SPICKARD R-II
ST. ELIZABETH R-IV
STEELVILLE R-III
STET R-XV
STOCKTON R-I
SUCCESS R-VI
SUMMERSVILLE R-II
SWEDEBORG R-III
SWEET SPRINGS R-VII
TANEYVILLE R-II
TARKIO R-I
THAYER R-II
THORNFIELD R-I
TINA-AVALON R-II
TRI-COUNTY R-VII
TWIN RIVERS R-X
UNION STAR R-II
VALLEY R-VI
VAN BUREN R-I
VERONA R-VII
WARSAW R-IX
WEAUBLEAU R-III
WELLSVILLE MIDDLETOWN R...
WEST NODAWAY CO. R-I
WEST ST. FRANCOIS CO. R...
WESTRAN R-I
WHEATLAND R-II
WHEATON R-III
WILLOW SPRINGS R-IV
WINONA R-III
WINSTON R-VI
WOODLAND R-IV
WORTH CO. R-III
WYACONDA C-1
ZALMA R-V

Small Town

AURORA R-VIII
AVA R-I
BALLARD R-II
BOLIVAR R-I
BONCL R-X
BOONVILLE R-I
BOWLING GREEN R-I
BRANSON R-IV
BROOKFIELD R-III
BUTLER R-V
CAMDENTON R-III
CANTON R-V
CARROLLTON R-VII
CARUTHERSVILLE 18
CENTRAL R-III
CHARLESTON R-I
CHILLICOTHE R-II
CLINTON
CRAWFORD CO. R-II
DAVIS R-XII
DENT-PHELPS R-III
DEXTER R-XI
EAST PRAIRIE R-II
EL DORADO SPRINGS R-II
ELDON R-I
FAIRVIEW R-XI
FARMINGTON R-VII
FAYETTE R-III
FREDERICKTOWN R-I
FULTON 58
GASCONADE CO. R-I
GLENWOOD R-VIII
GREEN FOREST R-II
HANNIBAL 60
HARDEMAN R-X
HAYTI R-II
HENRY CO. R-I
HOLLISTER R-V

Appendix I: Census Classifications

Small Town
HOWELL VALLEY R-I
JACKSON R-II
JUNCTION HILL C-12
KENNETT 39
KIRKSVILLE R-III
LACLEDE CO. C-5
LAMAR R-I
LEBANON R-III
LEESVILLE R-IX
LOUISIANA R-II
MACON CO. R-I
MALDEN R-I
MANES R-V
MARCELINE R-V
MARSHALL
MARYVILLE R-II
MEXICO 59
MOBERLY
MONETT R-I
MONITEAU CO. R-I
MONROE CITY R-I
MOUNTAIN GROVE R-III
MT. VERNON R-V
NEVADA R-V
NEW MADRID CO. R-I
NORTH ST. FRANCOIS CO.
NORTH WOOD R-IV
OAK HILL R-I
PALMYRA R-I
PEMISCOT CO. R-III
PEMISCOT CO. SPECL. SCH
PERRY CO. 32
PETTIS CO. R-XII
PLAINVIEW R-VIII
PLEASANT VIEW R-VI
POPLAR BLUFF R-I
PORTAGEVILLE
POTOSI R-III
RICHARDS R-V
ROLLA 31
SALEM R-80
SCOTT CITY R-I
SCOTT CO. CENTRAL SCHOOL
SCOTT CO. R-II
SEDALIA 200
SIKESTON R-VI
SOUTH HARRISON CO. R-II
ST. JAMES R-I
STE. GENEVIEVE CO. R-II
TRENTON R-IX
VAN-FAR R-I
WARRENSBURG R-VI
WAYNESVILLE R-VI
WEST PLAINS R-VII

St. Louis
ST. LOUIS CITY

Urban Fringe-Large City
AFFTON 101
BAYLESS
BELTON 124
BLUE SPRINGS R-IV
BRENTWOOD
CAMERON R-I
CLAYTON
CRYSTAL CITY 47
DESOTO 73
EXCELSIOR SPRINGS 40
FERGUSON-FLORISSANT R-I
FESTUS R-VI
FORT OSAGE R-I
FOX C-6
FT. ZUMWALT R-II
GRANDVIEW C-4
HANCOCK PLACE
HARRISONVILLE R-IX
HAZELWOOD
INDEPENDENCE 30
JEFFERSON CO. R-VII
JENNINGS
KIRKWOOD R-VII
LADUE
LAFAYETTE CO. C-1
LEES SUMMIT R-VII
LEXINGTON R-V
LIBERTY 53
LINDBERGH R-VIII
MAPLEWOOD-RICHMOND HEIGHTS
MEHLVILLE R-IX
MERAMEC VALLEY R-III
NORMANDY
OAK GROVE R-VI
ODESSA R-VII
PARKWAY C-2
PATTONVILLE R-III
PLATTE CO. R-III
PLEASANT HILL R-III
RAYTOWN C-2
RICHMOND R-XVI
RITENOUR
RIVERVIEW GARDENS
ROCKWOOD R-VI
SMITHVILLE R-II
SPECL. SCH. DST. ST. LOUIS CO.
SPRING BLUFF R-XV
ST. CLAIR R-XIII
STRAIN-JAPAN R-XVI
SULLIVAN C-2
SUNRISE R-IX
TROY R-III
UNION R-XI
UNIVERSITY CITY
VALLEY PARK
WARREN CO. R-III
WASHINGTON
WEBSTER GROVES
WELLSTON
WENTZVILLE R-IV
WINDSOR C-1

Urban Fringe-Medium City
CARL JUNCTION R-I
CARTHAGE R-IX
CENTRALIA R-VI
MARSHFIELD R-I
NEOSHO R-V
NIXA R-II
OZARK R-VI
REPUBLIC R-III
SAVANNAH R-III
WEBB CITY R-VII
WESTVIEW C-6

Appendix II
DESE Supervisory Areas

SUPERVISORY DISTRICT
Missouri Department
of
Elementary and
Secondary Education

REGION A
St. Louis (City)
St. Louis
Jefferson

REGION B
Cass
Clay
Jackson
Lafayette
Platte
Ray

REGION C
Barry
Christian
Dade
Greene
Jasper
Lawrence
McDonald
Newton
Stone
Taney

REGION D
Camden
Cole
Crawford
Dent
Franklin
Gasconade
Maries
Miller
Morgan
Osage
Phelps
Pulaski
Washington

REGION E
Bollinger
Butler
Cape Girardeau
Dunklin
Madison
Mississippi
New Madrid
Pemiscot
Perry
St. Francois
St. Genevieve
Scott
Stoddard
Wayne

REGION F
Barton
Bates
Benton
Cedar
Dallas
Henry
Hickory
Johnson
Pettis
Polk
St. Clair
Vernon

REGION G
Carter
Douglas
Howell
Iron
Laclede
Oregon
Ozark
Reynolds
Ripley
Shannon
Texas
Webster
Wright

REGION H
Adair
Audrain
Callaway
Clark
Knox
Lewis
Lincoln
Marion
Monroe
Montgomery
Pike
Putnam
Ralls
Schuyler
Scotland
Shelby
St. Charles
Sullivan
Warren

REGION I
Boone
Carroll
Chariton
Cooper
Howard
Linn
Macon
Moniteau
Randolph
Saline

REGION J
Andrew
Atchison
Buchanan
Caldwell
Clinton
Daviess
DeKalb
Gentry
Grundy
Harrison
Holt
Livingston
Mercer
Nodaway
Worth

BEST COPY AVAILABLE

Appendix II
DESE Supervisory Areas

A- (St. Louis)
AFFTON 101
BAYLESS
BRENTWOOD
CLAYTON
CRYSTAL CITY 47
DESOTO 73
DUNKLIN R-V
FERGUSON-FLORISSANT R-II
FESTUS R-VI
FOX C-6
GRANDVIEW R-II
HANCOCK PLACE
HAZELWOOD
HILLSBORO R-III
JEFFERSON CO. R-VII
JENNINGS
KIRKWOOD R-VII
LADUE
LINDBERGH R-VIII
MAPLEWOOD-RICHMOND HEIGHTS
MEHLVILLE R-IX
NORMANDY
NORTHWEST R-I
PARKWAY C-2
PATTONVILLE R-III
RITENOUR
RIVERVIEW GARDENS
ROCKWOOD R-VI
SPECL. SCH. DST. ST. LOUIS CO.
ST. LOUIS CITY
SUNRISE R-IX
UNIVERSITY CITY
VALLEY PARK
WEBSTER GROVES
WELLSTON
WINDSOR C-1

B- (Kansas City)
BELTON 124
BLUE SPRINGS R-IV
CASS CO. R-V
CENTER 58
CONCORDIA R-II
DREXEL R-IV
EAST LYNNE 40
EXCELSIOR SPRINGS 40
FORT OSAGE R-I
GRAIN VALLEY R-V
GRANDVIEW C-4
HARDIN-CENTRAL C-2
HARRISONVILLE R-IX
HICKMAN MILLS C-1
INDEPENDENCE 30
KANSAS CITY 33
KEARNEY R-I
LAFAYETTE CO. C-1
LAWSON R-XIV
LEES SUMMIT R-VII
LEXINGTON R-V
LIBERTY 53
LONE JACK C-6
MIDWAY R-I
MISSOURI CITY 56
NORTH KANSAS CITY 74
NORTH PLATTE CO. R-I
OAK GROVE R-VI
ODESSA R-VII
ORRICK R-XI
PARK HILL
PLATTE CO. R-III
PLEASANT HILL R-III
RAYMORE-PECULIAR R-II
RAYTOWN C-2
RICHMOND R-XVI
SANTA FE R-X
SHERWOOD CASS R-VIII
SMITHVILLE R-II
STET R-XV
STRASBURG C-3
WELLINGTON-NAPOLEON R-IX
WEST PLATTE CO. R-II

C- (Southwest)
ASH GROVE R-IV
AURORA R-VIII
AVILLA R-XIII
BILLINGS R-IV
BLUE EYE R-V
BRADLEYVILLE R-I
BRANSON R-IV
CARL JUNCTION R-I
CARTHAGE R-IX
CASSVILLE R-IV
CHADWICK R-I
CLEVER R-V
CRANE R-III
DADEVILLE R-II
DIAMOND R-IV
EAST NEWTON CO. R-VI
EVERTON R-III
EXETER R-VI
FAIR GROVE R-X
FORSYTH R-III
GALENA R-II
GREENE CO. R-VIII
GREENFIELD R-IV
HOLLISTER R-V
HURLEY R-I
JASPER CO. R-V
JOPLIN R-VIII
KIRBYVILLE R-VI
LOCKWOOD R-I
MARIONVILLE R-IX
MARK TWAIN R-VIII
MCDONALD CO. R-I
MILLER R-II
MONETT R-I
MT. VERNON R-V
NEOSHO R-V
NIXA R-II
OZARK R-VI
PIERCE CITY R-VI
PURDY R-II
REEDS SPRING R-IV
REPUBLIC R-III
SARCOXIE R-II
SENECA R-VII
SHELL KNOB 78
SOUTHWEST R-V
SPARTA R-III
SPOKANE R-VII
SPRINGFIELD R-XII
STRAFFORD R-VI
TANEYVILLE R-II
VERONA R-VII
WALNUT GROVE R-V
WEBB CITY R-VII
WESTVIEW C-6
WHEATON R-III
WILLARD R-II

D- (Central)
CAMDEN CO. R-II
CAMDENTON R-III
CLIMAX SPRINGS R-IV
COLE CO. R-I
COLE CO. R-II
COLE CO. R-V

Appendix H
DESE Supervisory Areas

D – (Central)
CRAWFORD CO. R-I
CRAWFORD CO. R-II
CROCKER R-II
DENT-PHELPS R-III
DIXON R-I
ELDON R-I
FRANKLIN CO. R-II
GASCONADE CO. R-I
GASCONADE CO. R-II
GREEN FOREST R-II
IBERIA R-V
KINGSTON K-14
LAQUEY R-V
LONEDELL R-XIV
MACKS CREEK R-V
MARIES CO. R-I
MARIES CO. R-II
MERAMEC VALLEY R-III
MILLER CO. R-III
MORGAN CO. R-I
MORGAN CO. R-II
NEW HAVEN
NEWBURG R-II
NORTH WOOD R-IV
OAK HILL R-I
OSAGE CO. R-I
OSAGE CO. R-II
OSAGE CO. R-III
PHELPS CO. R-III
POTOSI R-III
PULASKI CO. R-IV
RICHWOODS R-VII
ROLLA 31
SALEM R-80
SCHOOL OF THE OSAGE R-II
SPRING BLUFF R-XV
ST. CLAIR R-XIII
ST. ELIZABETH R-IV
ST. JAMES R-I
STEELVILLE R-III
STRAIN-JAPAN R-XVI
SULLIVAN C-2
SWEDEBORG R-III
UNION R-XI
VALLEY R-VI
WASHINGTON
WAYNESVILLE R-VI

E- (Southeast)
ADVANCE R-IV
ALTENBURG 48
BELL CITY R-II
BERNIE R-XIII
BISMARCK R-V
BLOOMFIELD R-XIV
CAMPBELL R-II
CAPE GIRARDEAU 63
CARUTHERSVILLE 18
CENTRAL R-III
CHARLESTON R-I
CLARKTON C-4
CLEARWATER R-I
COOTER R-IV
DELTA C-7
DELTA R-V
DEXTER R-XI
EAST PRAIRIE R-II
FARMINGTON R-VII
FREDERICKTOWN R-I
GIDEON 37
GREENVILLE R-II
HAYTI R-II
HOLCOMB R-III
JACKSON R-II
KELSO C-7
KENNETT 39
LEOPOLD R-III
MALDEN R-I
MARQUAND-ZION R-VI
MEADOW HEIGHTS R-II
NEELYVILLE R-IV
NELL HOLCOMB R-IV
NEW MADRID CO. R-I
NORTH PEMISCOT CO. R-I
NORTH ST. FRANCOIS CO. R-I
OAK RIDGE R-VI
ORAN R-III
PEMISCOT CO. R-III
PEMISCOT CO. SPECL. SCH. DIST.
PERRY CO. 32
POPLAR BLUFF R-I
PORTAGEVILLE
PUXICO R-VIII
RICHLAND R-I
RISCO R-II
SCOTT CITY R-I
SCOTT CO. CENTRAL SCHOOLS
SCOTT CO. R-II
SCOTT CO. R-IV
SENATH-HORNERSVILLE C-8
SIKESTON R-VI
SOUTH PEMISCOT CO. R-V
SOUTHLAND C-9
STE. GENEVIEVE CO. R-II
TWIN RIVERS R-X
WEST ST. FRANCOIS CO. R-IV
WOODLAND R-IV
ZALMA R-V

F- (West Central)
ADRIAN R-III
APPLETON CITY R-II
BALLARD R-II
BOLIVAR R-I
BRONAUGH R-VII
BUTLER R-V
CALHOUN R-VIII
CHILHOWEE R-IV
CLINTON
COLE CAMP R-I
DALLAS CO. R-I
DAVIS R-XII
EL DORADO SPRINGS R-II
FAIR PLAY R-II
GOLDEN CITY R-III
GREEN RIDGE R-VIII
HALFWAY R-III
HENRY CO. R-I
HERMITAGE R-IV
HICKORY CO. R-I
HOLDEN R-III
HUDSON R-IX
HUMANSVILLE R-IV
HUME R-VIII
JOHNSON CO. R-VII
KINGSVILLE R-I
KNOB NOSTER R-VIII
LA MONTE R-IV
LAKELAND R-III
LAMAR R-I
LEESVILLE R-IX
LEETON R-X
LIBERAL R-II
LINCOLN R-II
MARION C. EARLY R-V
MIAMI R-I
MONTROSE R-XIV
NEVADA R-V
NORTHEAST VERNON CO. R-I
OSCEOLA
PETTIS CO. R-V
PETTIS CO. R-XII
PLEASANT HOPE R-VI
RICH HILL R-IV

Appendix H
DESE Supervisory Areas

F – (West Central)

ROSCOE C-1
SEDALIA 200
SHAWNEE R-III
SHELDON R-VIII
SMITHTON R-VI
STOCKTON R-I
WARRENSBURG R-VI
WARSAW R-IX
WEAUBLEAU R-III
WHEATLAND R-II

G- (South Central)

ALTON R-IV
ARCADIA VALLEY R-II
AVA R-I
BAKERSFIELD R-IV
BELLEVIEW R-III
BUNKER R-III
CABOOL R-IV
CENTERVILLE R-I
COUCH R-I
DONIPHAN R-I
DORA R-III
EAST CARTER CO. R-II
EMINENCE R-I
FAIRVIEW R-XI
FORDLAND R-III
GAINESVILLE R-V
GASCONADE C-4
GLENWOOD R-VIII
HARTVILLE R-II
HOUSTON R-I
HOWELL VALLEY R-I
IRON CO. C-4
JUNCTION HILL C-12
LACLEDE CO. C-5
LACLEDE CO. R-I
LEBANON R-III
LESTERVILLE R-IV
LICKING R-VIII
LUTIE R-VI
MANES R-V
MANSFIELD R-IV
MARSHFIELD R-I
MOUNTAIN GROVE R-III
MOUNTAIN VIEW-BIRCH TREE R-III
NAYLOR R-II
NIANGUA R-V
NORWOOD R-I
OREGON-HOWELL R-III
PLAINVIEW R-VIII
PLATO R-V
RAYMONDVILLE R-VII
RICHARDS R-V
RIPLEY CO. R-III
RIPLEY CO. R-IV
SEYMOUR R-II
SKYLINE R-II
SOUTH IRON CO. R-I
SOUTHERN REYNOLDS CO. R-II
SUCCESS R-VI
SUMMERSVILLE R-II
THAYER R-II
THORNFIELD R-I
VAN BUREN R-I
WEST PLAINS R-VII
WILLOW SPRINGS R-IV
WINONA R-III

H- (Northeast)

ADAIR CO. R-I
ADAIR CO. R-II
BONCL R-X
BOWLING GREEN R-I
CALLAWAY CO. R-III
CANTON R-V
CLARK CO. R-I
COMMUNITY R-VI
ELSBERRY R-II
FRANCIS HOWELL R-III
FT. ZUMWALT R-II
FULTON 58
GORIN R-III
GREEN CITY R-I
HANNIBAL 60
HOLLIDAY C-2
JEFFERSON CITY
KIRKSVILLE R-III
KNOX CO. R-I
LEWIS CO. C-1
LOUISIANA R-II
LURAY 33
MADISON C-3
MARION CO. R-II
MEXICO 59
MIDDLE GROVE C-1
MILAN C-2
MONROE CITY R-I
MONTGOMERY CO. R-II
NEWTOWN-HARRIS R-III
NORTH CALLAWAY CO. R-I
PALMYRA R-I
PARIS R-II
PIKE CO. R-III
PUTNAM CO. R-I
RALLS CO. R-II
REVERE C-3
SCHUYLER CO. R-I
SCOTLAND CO. R-I
SHELBY CO. C-1
SHELBY CO. R-IV
SILEX R-I
SOUTH CALLAWAY CO. R-II
ST. CHARLES CO. R-V
ST. CHARLES R-VI
TROY R-III
VAN-FAR R-I
WARREN CO. R-III
WELLSVILLE
MIDDLETOWN R-I
WENTZVILLE R-IV
WINFIELD R-IV
WRIGHT CITY R-II
WYACONDA C-1

I- (North Central)

ATLANTA C-3
BEVIER C-4
BLACKWATER R-II
BOONE CO. R-IV
BOONVILLE R-I
BOSWORTH R-V
BROOKFIELD R-III
BRUNSWICK R-II
BUCKLIN R-II
CALLAO C-8
CARROLLTON R-VII
CENTRALIA R-VI
CLARKSBURG C-2
COLUMBIA 93
COOPER CO. C-4
COOPER CO. R-IV
FAYETTE R-III
GILLIAM C-4
HALE R-I
HARDEMAN R-X
HARRISBURG R-VIII
HIGBEE R-VIII
HIGH POINT R-III
HOWARD CO. R-II
KEYTESVILLE R-III
LA PLATA R-II
LINN CO. R-I
MACON CO. R-I
MACON CO. R-IV
MALTA BEND R-V
MARCELINE R-V
MARSHALL

Appendix II
DESE Supervisory Areas

I – (North Central)

MEADVILLE R-IV
MIAMI R-I
MOBERLY
MONITEAU CO. C-1
MONITEAU CO. R-I
MONITEAU CO. R-V
MONITEAU CO. R-VI
NEW FRANKLIN R-I
NORBORNE R-VIII
NORTHEAST RANDOLPH CO. R-IV
NORTHWESTERN R-I
OREARVILLE R-IV
OTTERVILLE R-VI
PRAIRIE HOME R-V
RENICK R-V
SALISBURY R-IV
SLATER
SOUTHERN BOONE CO. R-I
STURGEON R-V
SWEET SPRINGS R-VII
TINA-AVALON R-II
WESTRAN R-I

J- (Northwest)

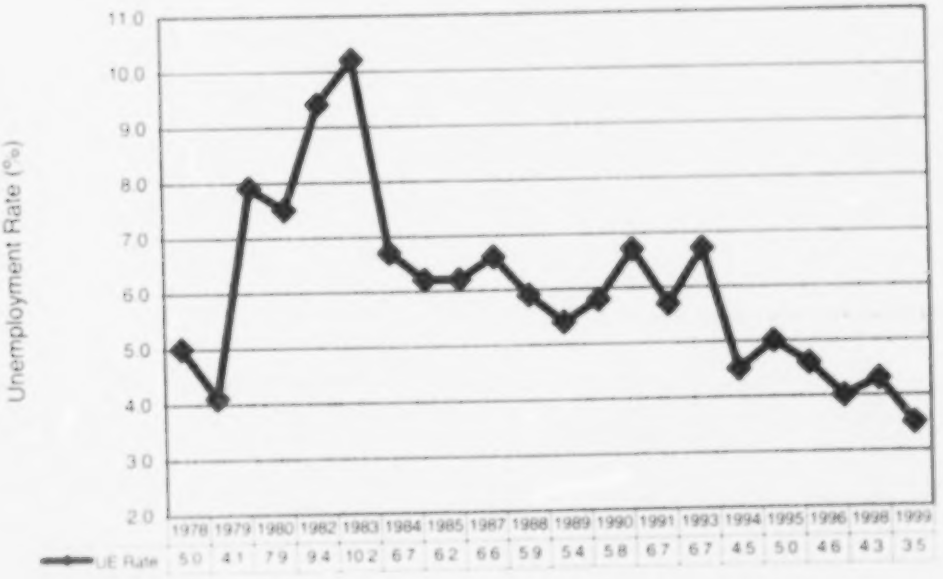
ALBANY R-III
AVENUE CITY R-IX
BRAYMER C-4
BRECKENRIDGE R-I
BUCHANAN CO. R-IV
CAINSVILLE R-I
CAMERON R-I
CHILLICOTHE R-II
CLINTON CO. R-III
COWGILL R-VI
CRAIG R-III
EAST BUCHANAN CO. C-1
FAIRFAX R-III
GALLATIN R-V
GENTRY CO. R-II
GILMAN CITY R-IV
GRUNDY CO. R-V
HAMILTON R-II
HOLT CO. R-II
JEFFERSON C-123
KING CITY R-I
KINGSTON 42
LAREDO R-VII
LATHROP R-II
LIVINGSTON CO. R-III
MARYVILLE R-II
MAYSVILLE R-I
MID-BUCHANAN CO. R-V
MIRABILE C-1
NEW YORK R-IV
NODAWAY-HOLT R-VII
NORTH ANDREW CO. R-VI
NORTH DAVIESS R-III
NORTH HARRISON R-III
NORTH MERCER CO. R-III
NORTH NODAWAY CO. R-VI
NORTHEAST NODAWAY CO. R-V
OSBORN R-O
PATTONSBURG R-II
PLEASANT VIEW R-VI
POLO R-VII
PRINCETON R-V
RIDGEWAY R-V
ROCK PORT R-II
SAVANNAH R-III
SOUTH HARRISON CO. R-II
SOUTH HOLT CO. R-I
SOUTH NODAWAY CO. R-IV
SOUTHWEST LIVINGSTON CO. R-I
SPICKARD R-II
ST. JOSEPH
STEWARTSVILLE C-2
TARKIO R-I
TRENTON R-IX
TRI-COUNTY R-VII
UNION STAR R-II
WEST NODAWAY CO. R-I
WINSTON R-VI
WORTH CO. R-III

Supplementary Charts

This section of the report presents the results of additional analyses that the research group conducted to investigate the potential role of pay in teachers' decisions to leave the teaching profession. The following charts are included in this supplement to the statistical analysis report.

1. Figure S1: Missouri Unemployment Rates
2. Figure S2: Estimated 1998-99 Earnings of Teachers Who Left Public School Classrooms Between 1994-95 and 1997-98
3. Figure S3: Estimates of the Relative Earnings of Teachers Who Left Public School Classrooms Between 1994-95 and 1997-98
4. Figure S4: Relative Earnings and Percent Reemployed
5. Figure S5:Salary Schedules and Average Earnings
6. Figure S6: Estimated Effect of a $5,000 Increase in Teacher Pay on Turnover

Figure S1: Missouri Unemployment Rates



Source: Bureau of Labor Statistics, Seasonally-adjusted July Unemployment Rate

In considering problems of teacher recruitment and retention in Missouri, it should be kept in mind that the state of the overall economy plays a role as well. The above chart shows that the unemployment rate in Missouri is at historically low levels. In fact, it is at the lowest level in over two decades. Moreover, the unemployment rates in the late 1970's coincided with a period of declining student enrollments whereas the current low rates are in a period of rising student enrollment and teacher employment. These low unemployment rates have contributed to recruitment difficulties in a wide range of occupations and industries.

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What Missouri Teachers Earn When They Leave Public School Classrooms

Opportunity Wages

Previous research has shown both intra-district and inter-district salary differentials influence decisions teacners make about their continued participation in the profession. One goal of current research is to estimate the opportunity wage for teachers. The opportunity wage is the wage that a teacher can earn outside the public school classroom.

Starting with the 1994-95 school year we identified teachers who exited Missouri public schools. The table below presents the number of teachers exiting the Missouri public school teaching workforce between 1994-95 and 1997-98.

Years	Exiting Teachers
1994-95	3823
1995-96	4264
1996-97	4999
1997-98	5262

The results were sent to the Public School Retirement System of Missouri (PSRSMO) to match with their retirement database. They found that 4754 of these exiting teachers had retired and 166 had died. These records were removed from the data set and the remaining 13,423 records were matched with the most recent Missouri Unemployment Insurance (UI) earnings database available to us. We matched the exited teachers to the employment and earnings data for the third and fourth quarter of 1998 (98:3 and 98:4) and the first quarter of 1999 (99:1). Earnings during this period were multiplied by 4/3 to obtain an annualized salary. A total of 7448 (54.9 percent) of the teachers who exited the classroom were found in the Missouri UI database.

Figure S2: Estimated 1998-99 Earning of Teachers who left Public School Classrooms Between 1994-95 and 1997-98

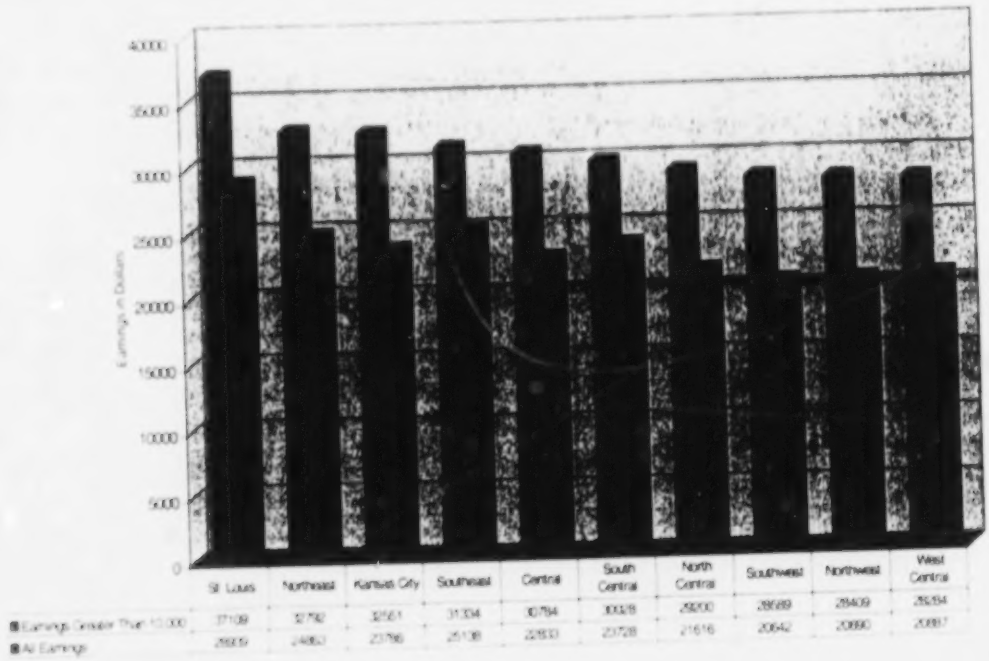

Figure S2 presents the estimated 1997-98 earnings of teachers who left public school classrooms between 1994-95 and 1997-98. The two measures shown in the figure represent the average earnings of ***all*** former teachers who were found in the UI database (the second bar in the figure) and the average earnings of former teachers whose annualized earnings were at least $10,000 (the first bar in the figure.) We used the $10,000 annualized earnings criterion as a proxy to differentiate full time workers from part time workers, since the UI database does not report hours of work in any quarter.

The average earnings of exited teachers who were reemployed in Missouri full time ranged from $37,109 in the St. Louis area to $28,284 in the West Central region.

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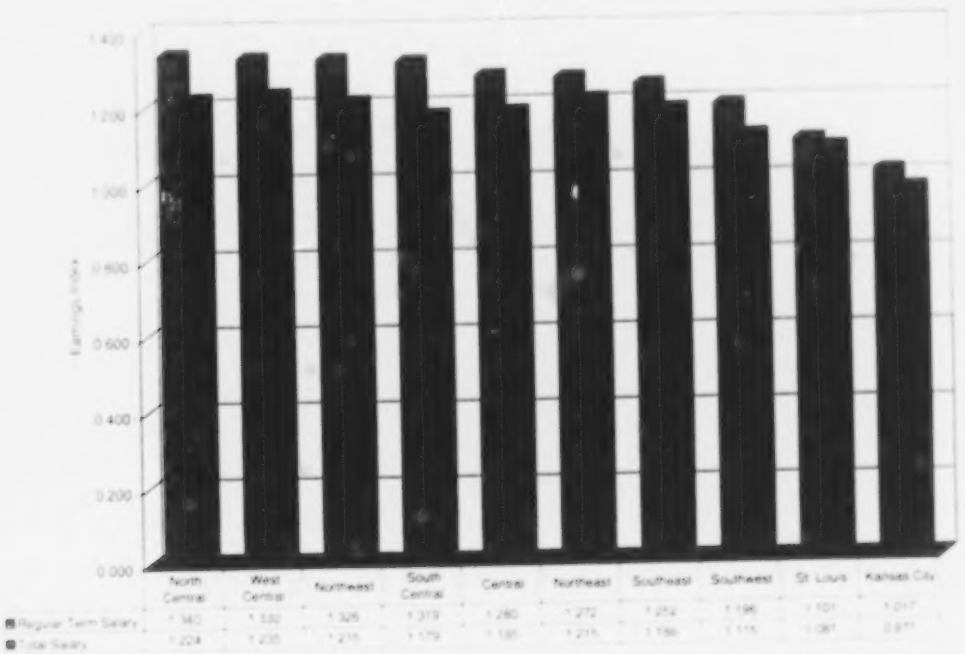
Figure S3: Estimates of the Relative Earnings of Teachers Who Left Public School Classrooms Between 1994-95 and 1997-98



We calculated a relative earnings index for exited teachers who were in the full time reemployment group. The relative earnings index was derived by dividing the estimated full time 1998-99 non-teaching earnings by the salaries those individuals made as teachers when they left the public school classrooms. Thus, an index value of 1.00 indicates that the mean earnings of teachers in 1998-99 is exactly equal to their mean earnings when they left teaching. Two separate index values were calculated: one based on exited teachers' last regular term salary and the other based on their last total salary. Total salaries would include supplements for coaching, career ladder, summer school, and other remunerated activities.

Figure S3 plots the relative earnings by region. The ratio of non-teaching to full time teaching earnings ranged from 1.22 in the North Central region down to .97 for the Kansas City area.

Note that these ratios provide an upward biased estimate of the change in earnings experienced by teachers when they leave the classroom. This bias results because teaching earnings are not adjusted for any gains which might have occurred between the time teachers left the classroom and the time we estimated their non-teaching earnings, i.e., between 1994-95 to 1997-98, and 1998-99.

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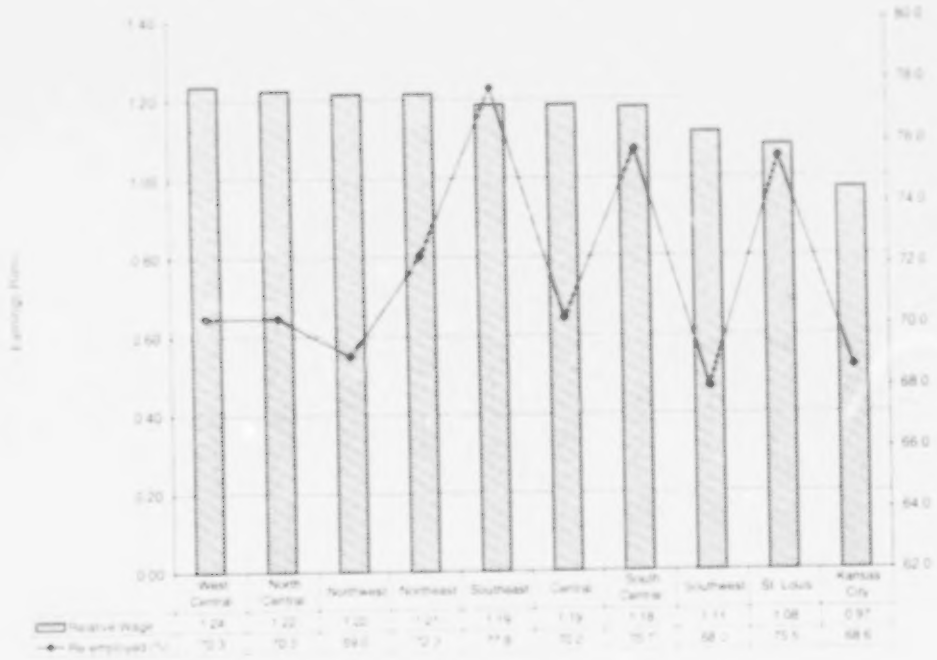
Figure S4: Relative Earnings and Percent Reemployed



Because we were unable to find all exited teachers in the UI database, we were concerned that the estimates of relative earnings could have been based on a small sample of exited teachers. Figure S4 plots both the average relative earnings of exited teachers (the vertical bars measured on the left axis) and the percent of exited teachers in each region who were found to be reemployed in Missouri (the line graph measured on the right hand vertical axis.) While the reemployment rates vary somewhat from region to region, the differences are less than ten percentage points, and do not seem to be systematically related to the level of reemployment earnings.

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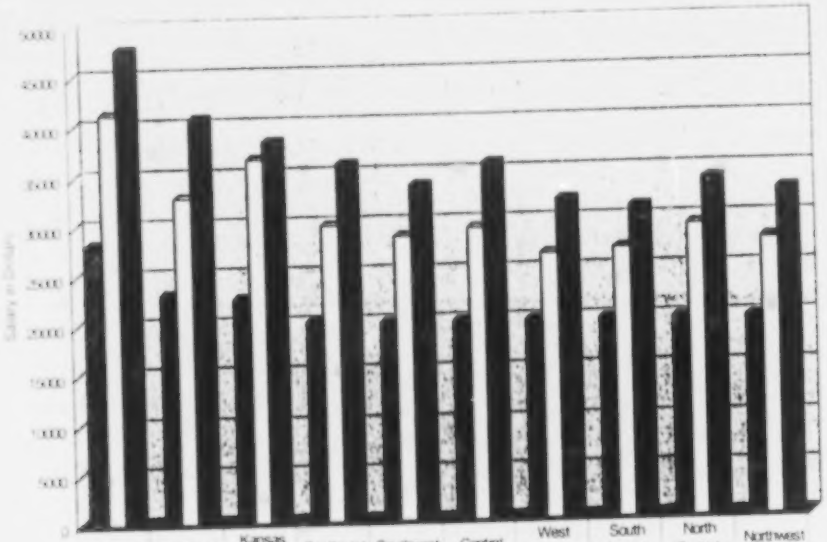
Figure S5: Salary Schedules and Average Earnings



	St. Louis	Northeast	Kansas City	Southeast	Southwest	Central	West Central	South Central	North Central	Northwest
BA - Min	28254	23111	22679	23240	23000	23000	23000	23000	23000	23000
Term Salary	41254	33945	36680	34808	33929	33425	35062	27150	29400	27906
MA - Max	47755	40814	39432	36053	31790	35686	32079	31275	34049	32953

In addition to investigating the influence of opportunity wages on changes within teaching, we have analyzed salary schedules in Missouri public school districts. The salary schedule data were provided to us by the Missouri State Teachers Association (MSTA). Figure S4 plots average term salaries against data from the salary schedules for the 1997-98 school year.

The Term Salary value is the computed mean of the regular term salary for teachers within each region. The BA – Min. value is the mean term salary that individuals can expect when entering the profession with only a bachelor's degree and no teaching experience. The MA – Max. value is the mean of the maximum term salary an individual can expect with a master's degree. When the mean term salary is close to MA – max. we know that many teachers have "topped out" on the salary schedule.

Note that these salary data are regular term salaries only and do not include supplements for coaching or other activities, summer school teaching, or career ladder.

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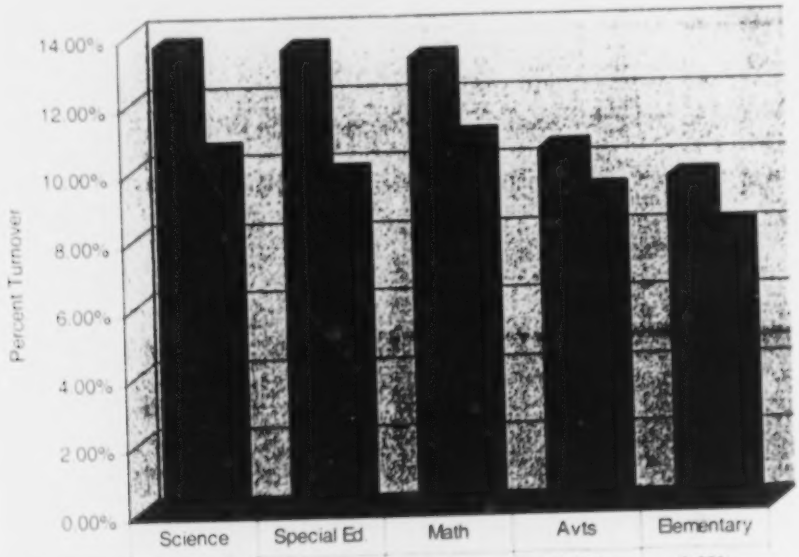
Figure S6: Estimated Effect of a $5,000 Increase in Teacher Pay on Turnover



	Science	Special Ed.	Math	Avts	Elementary
Actual Turnover	13.70%	13.56%	13.25%	10.51%	9.62%
Sim. Turnover + $5k	10.61%	9.87%	10.89%	9.23%	8.13%

Actual turnover computed from DESE Core data files. Simulated effect based on econometric model of turnover.

The chart above shows the simulated effect of a $5,000 pay increase on teacher turnover in various fields. These estimates are based on coefficients for the pay variable in an econometric model of teacher turnover. In this model we attempted to control for other factors which influenced teacher turnover in order to isolate the effect of teacher pay. Variables which were controlled included the age and experience level of the teachers, their demographic characteristics, and the student poverty level and demographic composition of the school.

Figure S6 plots the estimated effect of pay on teacher turnover rates. The estimated impact tends to be largest for special education and science teachers (lowers the turnover rate by 3.7% and 3.1%, respectively), and smallest for elementary teachers (reduces the turnover less than 1.5%).

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Educational Development Project

Report on Superintendent Surveys on Recruitment and Retention of Educators in Missouri's Public Schools

A District-Level Perspective on Recruitment and Retention in Missouri's Schools

Report on Superintendent Surveys on Recruitment and Retention of Educators in Missouri's Public Schools: District-level Perspective on Recruitment and Retention in Missouri's Schools

Purposes of This Study and Report

1. to bring up to date the statistical analysis
2. to add superintendents' perspective to the picture emerging from the statistical analysis

Process Employed

Janet Goeller, Director of Recruitment and Retention, and one or more of the contractors attended eleven Missouri Association of School Administrators (MASA) meetings between late August and mid-October in each of DESE's Supervisory Regions, as well as the annual meeting of the Missouri Association of School Personnel Directors. At each meeting, attendees (i.e., superintendents for the most part) were provided a brief context for the project, asked to complete a four-page survey (see Attachment 1), and, when their agenda allowed, engaged in an open-ended but facilitated discussion of the recruitment and retention situation in their districts and within their region; discussion periods were possible in nine of the twelve administration sites. Survey completion time was typically approximately twenty minutes; discussion periods ran between 15 and 30 minutes. Subsequent to the on-site administrations, surveys were mailed to the 265 districts not represented at an MASA meeting. As a result of the follow-up mailing, only 51 districts remain unreported.

Contents and Emphases of The Report

This report will present findings at two levels:

- *Part 1:* statewide summary of findings
- *Part 2:* findings by DESE supervisory region and findings by census classifications; Part II begins on page 20. See Attachments 2A and 2B of the statistical analysis report for listings of the school districts in each supervisory region and in each of the census classifications.

Nature of the Survey Sample

The sample includes 473 (or 90%) of Missouri's 524 school districts. The following two tables describe the sample population by DESE Supervisory Region and by Census Classifications[1].

Table 1: Number & Percentages of Present/Missing Surveys by DESE Supervisory Region

	A: St. Louis	B: Kansas City	C: South west	D: Central	E: South-east	F: West Central	G: South Central	H: North-east	I: North Central	J: North west
present	33 92%	41 95%	50 86%	49 92%	57 95%	49 94%	47 84%	51 96%	45 83%	51 86%
missing	3 8%	2 5%	8 14%	4 8%	3 5%	3 6%	9 16%	2 4%	9 17%	8 14%

[1] See Attachment 1 for a complete listing of districts by Supervisory Region and by Census Classification.

Table 2: Number & Percentages of Present/Missing Surveys by Census Classifications

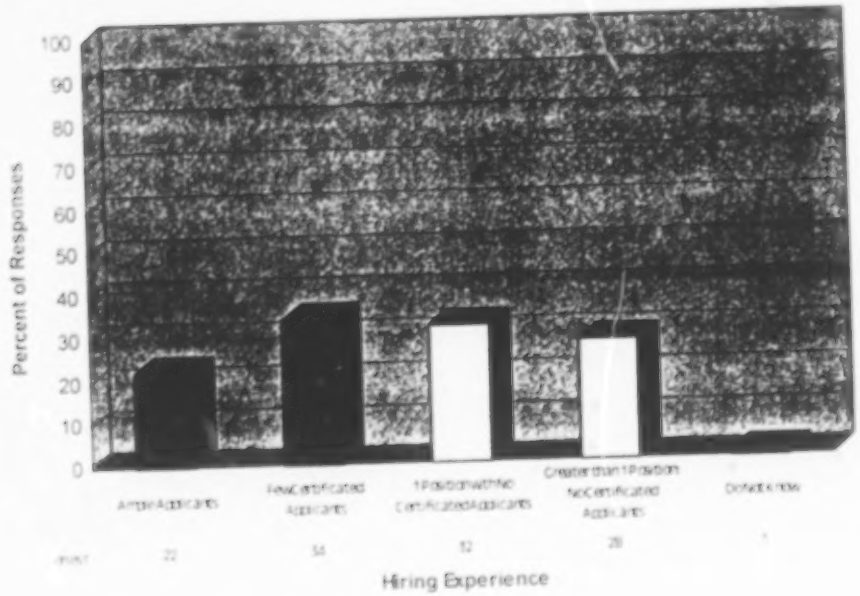
	1	2	3	4	5	6	7	8	9	10
present	4 100%	6 86%	58 95%	11 100%	3 75%	86 93%	55 87%	247 89%	1 100%	1 100%
missing	0 0%	1 14%	3 5%	0 0%	1 25%	6 7%	8 13%	32 11%	0 0%	0 0%

Census Classification Legend
1: Large City (less St. Louis and Kansas City; see classifications 9 and 10 below)
2: Mid-Size City
3: Urban Fringe of Large City
4: Urban Fringe of Mid-Size City
5: Large Town
6: Small Town
7: Rural Metro
8: Rural Non-Metro
9: St. Louis
10: Kansas City

QUESTION 1: How Would You Describe Your District's Experience During the 1998-99 School in Staffing Your District's Classrooms with Appropriately Certificated Teachers?

The respondents were asked to select, from four written options, the statement best describing their district's experience with hiring professional instructional staff during the 1998-99 school year. The results indicated few respondents having an easy time hiring certificated staff for their district classrooms. Rather, the data indicate that 94% of the districts responding had some difficulty in finding and hiring appropriately certificated instructional personnel. Interestingly, 60% of the districts reported having at least one position for which no certificated applicants applied for the available position(s), and 28% had more than one position for which they had no appropriately certificated applicants.

District Hiring Experience During 1998-99 School Year



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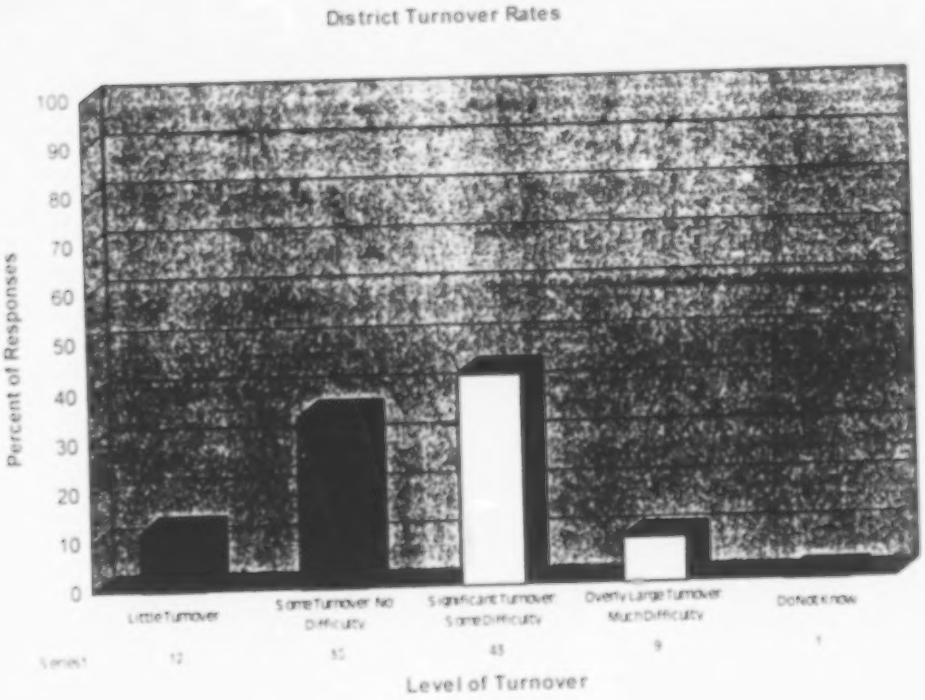
QUESTION 2: How Would You Describe Teacher Turnover in Your District During the 1998-99 School Year?



The respondents were asked to select the statement, from among four options, best describing their experiences with instructional staff turnover during the 1998-99 school year. The data indicate that more than 52% (or 246) of the responding districts experienced significant turnover, presenting some difficulty in placing qualified candidates, or an overly large turnover, presenting much difficulty in placing qualified candidates, in their classrooms. These findings indicate a tremendous amount of movement of teachers either between districts or out of Missouri public school classrooms.

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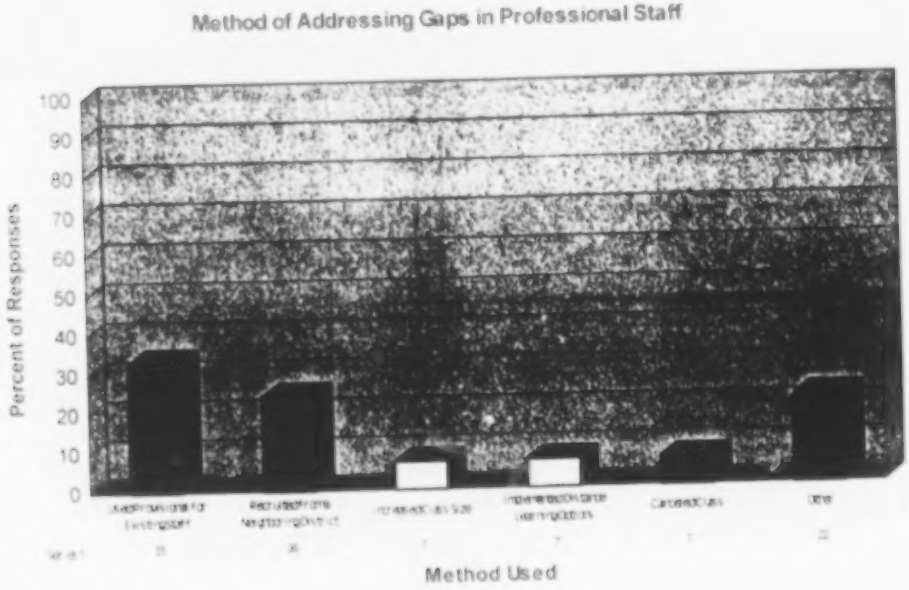
QUESTION 3: How Did You Resolve Any Difficulties You Had in Hiring Appropriately Certificated Teachers for Your District's Classrooms?



The superintendents were asked to select from among a set of possible strategies for dealing with gaps in their professional staff. They were also given the opportunity to list options other than those given in the survey; responses to the "other" category follow. Of those options provided in the survey, the most often selected strategy was to request a provisional certificate from DESE to allow a member of the existing staff to teach in the classroom for which there were no acceptable applicants; provisionals are also addressed in the "other category," sometimes masking as "alternative certificates." Presumably these were granted, and the staff members, under the provisional certificate, were assigned to teach in the classes in question. This indicates a reliance by districts on provisional certificates and the inclination of DESE to grant such certificates. The potential for students being taught by professionals not specifically prepared to teach within a particular discipline is high given such a strategy. However, such a strategy ensures that the person in the classroom has at least some professional education training and experience.

The next most used strategy was recruiting from neighboring districts. Interestingly, while this strategy does not put unqualified teachers in classrooms, the net result is a transference of the staffing gap to another district. If this gap is not filled by a new graduate or a teacher returning to the profession, then the deficit remains and other strategies are likely to be employed. Still this strategy does not directly put non-qualified or inappropriately certificated teachers in the classroom.

The remaining three options were chosen with virtually the same frequency. Interestingly, a number of recruitment problems were handled by canceling the class not covered. While this

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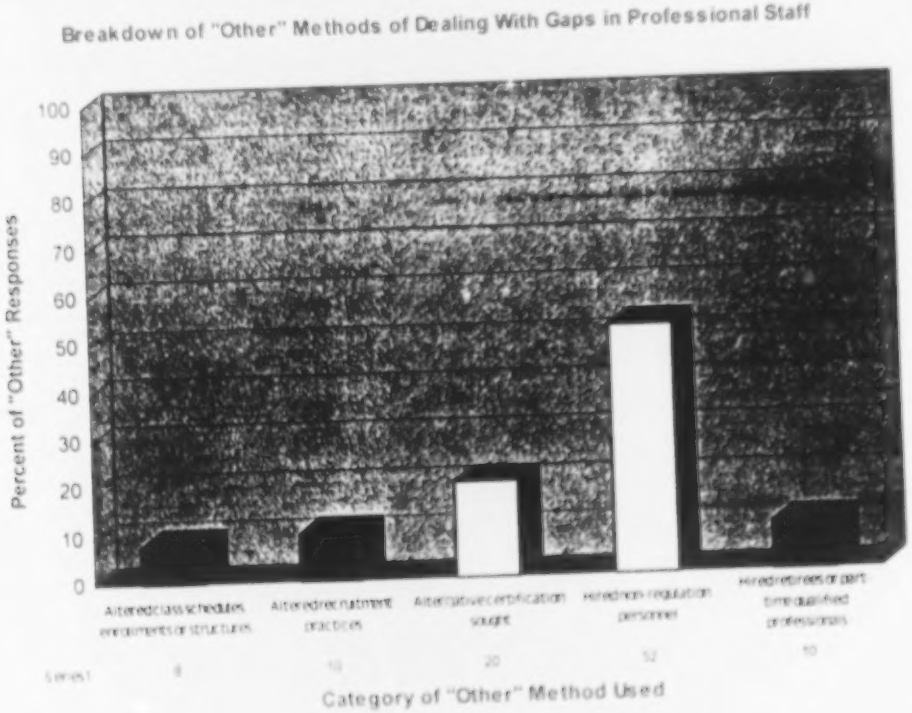
does not put an out-of-area teacher in the classroom, it does impact the opportunity of district students to learn the material or receive the instruction they need or expect.

RESPONSES TO "OTHER ACTION TAKEN": 199 Responses Report the Following Categories of Actions Beyond (or in some instances restating) Those Provided on the Survey and Reported Above



Adding to Individuals Assignments or Otherwise Altering Scheduling

- 8% report having to add to teachers' or counselors' assignments, to increase class size, to hire aides to accommodate larger class sizes, and/or to reschedule teachers and students in order to combine classes, etc. In at least one instance, these kinds of actions eliminated teachers' planning periods

Increasing Recruitment Efforts & Hiring from Out-of-State

- 10% report having increased their recruitment efforts, particularly their out-of-state efforts

Hiring Individuals Without Full Qualifications or Individuals with Less-than-Desirable Qualifications from within Missouri and from Other States or Individuals for Whom They Needed to Pursue Alternative Certificates

72% of the respondents described needing to take an action that involved placing someone without full qualifications (i.e., appropriate certification) or someone with less experience and/or less-than-desirable qualifications into a classroom. Below are examples of the kinds of actions described by respondents:

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- hiring less experienced teachers
- hiring low-quality teachers, but someone who at least held a certificate
- writing academic contracts with area college (i.e., provisional certification program)
- hiring individuals to teach outside of their fields, hiring partially qualified people, or hiring other not-yet certified personnel (e.g., student teachers)
- taking advantage of programs that allow hiring a individual out-of-field (e.g., provisional certification, Special Teaching Assignment program, and Critical Needs provisions) with the assistance of the DESE area supervisor
- retraining elementary teachers in other areas
- using personnel with non-teaching degrees while they concurrently completed their student teaching
- using college instructors part-time on a contracted basis
- reassigning staff while asking them to take sufficient classes to obtain a temporary certificate
- using alternative certification

Hiring Retirees (and/or Convincing People Not to Retire) or Other Qualified Part-Time Professionals

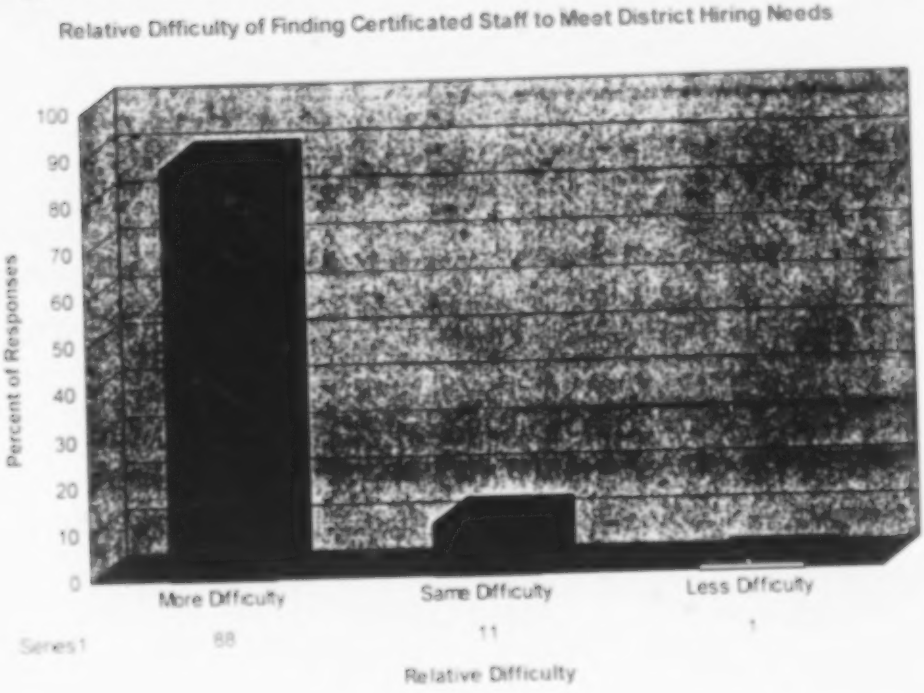
- 10% report hiring retirees and/or convincing staff not to retire and/or hiring part-time certified teachers, substitutes, and temporaries

Other Actions Necessitated by Shortages

- paying teachers at a daily rate for staff development days
- hiring teachers after the school year has already begun
- sharing teachers with another district
- offering bonuses to attract and to keep teachers

QUESTION 4: Based on Your Experiences During the 1999-2000 School Year, Is it More, less Difficult, or Just as Difficult to Staff Your District's Classrooms as in Previous Years?

Respondents were asked to characterize their district's experience during the 1998-99 school year as either "more difficult," of the "same difficulty," or "less difficult" than in previous years. By and large, most districts (88%, or 416 districts) reported having more difficulty in meeting their instructional hiring needs. Only 11% of the districts reported no change in difficulty. While the data do not allow this to be reported as a trend, anecdotal evidence from the survey meetings suggests that the level of difficulty has been increasing over the last three years.



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QUESTION 5: What Problems, Barriers, And/or Regulations Impede Your Ability to Staff Your District's Classrooms with Appropriately Certificated Classroom Teachers?

Respondents were requested to consider all problems (barriers and regulations) affecting their districts--not just those they attribute to the certification process. Although the question focused on classroom teachers, respondents across the state broadened the perspective to include all certificated staff (i.e., adding counselors, administrators, etc.)

PROBLEMS (problems tending not to focus on regulations/requirements)

- ability to provide students with a positive learning environment
- filling special education areas
- district location (rural and inner city vs. suburbs), class size, classroom space, and parental support/commitment that increase difficulty in attracting and retaining high-quality educators (e.g., for rural areas [27% of respondents indicated the following]: sparsely populated areas, driving distances, low salaries and small benefit packages, adequate housing; for inner-city areas: perceptions of crime and safety, poorly equipped classrooms)
- Charter schools
- competition for teachers (e.g., mathematics and science) from business sector
- standards that are too high (especially given starting salaries)
- fear of law suits for placing people out of field (e.g., recent issues regarding credentials of teachers who teach high school dual credit courses); risk of hiring graduates before their certificates are fully processed
- fewer applicants in general and even fewer quality candidates even within the few that apply (e.g., weak preparation of candidates in instructional practice and technology); lack of minority candidates
- increases in number of ESOL students
- lack of coordination between districts' needs and colleges/university program availability (e.g., industrial technology, family & consumer science, library/media)
- need for teachers with dual certifications
- unrealistic expectations of Missouri Assessment Program (MAP)
- difficulties in publishing openings in places where large numbers of candidates will see them
- intense spring-time competition among school districts for limited number of candidates, compounded by tenured teachers who may resign later without penalty (i.e., they have until June 1 to resign and sign elsewhere) and policies that allow teachers who have made an oral commitment to accept another offer, only to return un-signed their letter of intent
- increasing numbers of staff who are eligible for retirement
- stress and burn-out (especially among special education teachers)
- individuals who satisfy their PC requirements (i.e., graduate work) and Career Ladder to pursue degrees in non-essential areas (i.e., they are not seeking additional certificates in the fields most in need)

BARRIERS (barriers tending to lean more to regulations)

- certificate reviews take too long; certification office is inflexible in its application of requirements; certification office requires too much paperwork
- certification manual is hard to understand
- college graduation requirements keep going up (more credit hours required, therefore more cost and longer time needed to complete degrees)
- college/university control of the setting of certification requirements; too many requirements for science, counseling, special education, library/media, speech/language specialists,

secondary principals, substitutes, special education aides, foreign language, music, elementary (e.g., early childhood certification required to teach kindergarten), physical education, industrial arts/technology, agriculture, business, computer, behavioral disorders, family & consumer science

- professional education requirements further increase competition from business sector (especially for mathematics and science teachers) in particular (a) given low starting salaries for beginning teachers compared to beginning salaries in business and (b) Critical Shortage areas
- Public School Retirement System (PSRS) limitation to 550 hours of teaching
- implementation of IDEA

REGULATIONS (regulations tending to focus on DESE requirements)

- testing requirements (NTE, PRAXIS, SLLA, Assessment Center) faced by candidates
- continuing education requirements (i.e., the PD and PC systems) without providing corresponding and commensurate compensation
- criminal background check requirement
- non-existence of an effective and efficient alternative certification process
- narrowing of certificate grade ranges (e.g. separating kindergarten from elementary certificate; separating middle school from elementary and high school) and endorsement areas (e.g., sciences), leading to unrealistic stratification of staffing and the splintering of subject areas
- middle school requirement precludes superintendent's ability to move teachers up and down the system where they are most needed
- failure to grant credit for life experience
- inconsistent application of requirements by DESE (e.g., the rule says that a district cannot hire student teachers, but Kansas City is allowed to do just that)

QUESTION 6: What State Level Policies, Services, And/or Strategies That DESE Could Implement Would Help Your District Address the Problems or Issues Raised in the Questions Above? (Please Prioritize Your List with "1" Being the Most Important.[2])

Although the suggestions that follow have been categorized and in some instances several similar suggestions have been collapsed, what follows are for the most part suggested policies and/or strategies as they were made by the respondents.

A. *LEGISLATION, REGULATIONS, POLICIES, PROCEDURES*

1. **Superintendent's Suggestions for Teacher Retirement**: The Public School Retirement System (PSRS) should
- allow retired teachers to teach full-time (especially in Critical Shortage areas)
- allow teachers to return to the classroom without limit/penalty caps
- allow teachers to come back to another district while drawing retirement benefits; allow teachers to teach two years while drawing benefits
- raise the 550-hour cap

2. **Superintendent's Suggestions for Restructuring Certificate Grade Ranges & Eliminating Specific Certificates**
- create more K-6, K-8, 6-12, and 7-12 certificates
- ease initial requirements; allow certificate grade ranges as in the past; don't limit certificates to only a couple of grade levels (e.g., middle school and early childhood "B-3")
- eliminate middle school certificate, especially for small districts
- eliminate health and early childhood (B-3) certificates
- create one certificate for all areas of special education and for all levels of counselor

3. **Superintendent's Suggestions for the Professional Classification (PC) System**
- give all teachers four years to meet PC II requirements
- return to life certificates

4. **Superintendent's Suggestions for DESE's Certification Office**
- simplify the procedures for obtaining certificates
- speed up procedures for obtaining provisional, temporary, and substitute certificates
- be more service oriented: less regulation and more assistance
- follow through on promises to work with districts
- DESE should remain in charge of all certification *(in contrast to suggestions elsewhere that want to take certification away from DESE & the SBE)*
- develop a way to convert elementary certificates to other high-demand areas
- provide more timely notification on changes in certification
- provide more support in securing temporary certificates
- provide extra assistance to superintendents who are trying to fill Critical Shortage positions
- work with MSHSAA to create a coaching endorsement
- apply requirements consistently across the state

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[2] Since superintendents were so inconsistent in prioritizing their suggested policies (et al.), this review will not try to reveal priorities.

5. **Superintendent's Suggestions for MACCE and the State Board of Education (SBE)**
- provide superintendents greater representation on MACCE
- decrease college/university representation on MACCE
- disband MACCE
- remove the SBE's authority over certification

6. **Superintendent's Suggestions for the Missouri School Improvement Plan (MSIP) & the Comprehensive School Improvement Plan (CSIP)**
- create separate MSIP requirements for K-8 districts
- lower MSIP-required counselor:student ratio (at least until sufficient numbers of counselors are available for all districts to meet the required ratio)
- revise statewide salary minimums such that they reflect statewide "norm"
- waive rules so districts can comply with MSIP
- re-evaluate MSIP's expectations regarding Curriculum Frameworks and MAP (Missouri Assessment Program)
- forgive LEAs for hiring non-certificated teachers
- reduce state and federal regulations across-the-board
- reduce state and federal paper work/documentation requirements across-the-board
- make CSIP Standards more realistic

B. CERTIFICATION REQUIREMENTS, EDUCATION PREPARATION, AND ALTERNATIVE SOURCES OF SUPPLY

1A. Superintendent's Suggestions for Creating Greater Flexibility in Allowing Educators Entrance into the Field

- allow applicants who pass CBASE to teach regardless of certification area
- allow classroom teachers to teach physical education, music and art without certification in these areas
- make foreign language certification more flexible
- allow fully certified teachers in one field to test into another area (award certification if able to pass PRAXIS in new area)
- more flexibility for life experience; count life-experience toward meeting requirements
- allow more "general" certificates (e.g., a general science certificate)
- allow more and expand rules governing provisional and temporary certificates (especially in special education, elementary)
- allow non-certificated degree candidates more flexibility in entering the classroom
- allow para-professionals to teach special education classes; allow special education aides to be the teacher-of-record
- allow student teachers to serve as the teacher-of-record
- create more flexible alternative certification (particularly for special education); loosen requirements so more universities can provide alternative certification programs (7% of respondents made this suggestion); better organization for alternative certification programs
- allow people with a BA to teach (e.g., a BA in Speech should be allowed to teach speech & theater)
- eliminate salary compliance requirement, thus allowing small districts to provide educational services
- create a "training certification" category so small districts may train their own teachers
- allow districts to hire speech therapists rather than speech pathologists
- grant certification to junior high and middle school teachers in Critical Shortage areas
- allow individuals with degrees in counseling and library science (but not certificates) to work in k-12 schools

- allow superintendents more flexibility to alleviate hard-to-fill positions
- allow individuals more than two years to secure certification
- use the Administrator's Assessment Center for professional development, but eliminate passing the Center assessment an initial requirement
- allow LEAs to hire social workers to address guidance staffing
- change early childhood certification so that early childhood special education comes with it automatically
- issue temporary certificates to those waiting on their FBI check to come back
- extend provisional certification to related fields

1B. Changes Needed in Certification Requirements (in general and in particular):

- science, music, art, librarian, science, middle school, 7-12 certificates in general, special education, speech therapy, eliminate physical impairments from cross-categorical special education certificate, decrease number of credit hours required to obtain a certificate, consolidate like areas (e.g., within the sciences), mathematics, industrial technology; drop national tests (National Teacher Examination/PRAXIS), eliminate Administrator's Assessment Center; stop raising certification requirements; require only one student teaching placement; allow district Human Resource staff to establish certification requirements
- establish more realistic subject requirements for secondary school administrators

2. **Superintendent's Suggestions for Colleges & Universities**

- make available more and more-accessible classes for teachers going into administration
- produce quality teachers
- stop closing preparation programs in needed areas (e.g., speech therapists [vs. pathologists], special education, Family & Consumer Science)
- implement the same requirements statewide
- cooperate with DESE (e.g., around special education programs)
- put K-12 teachers and administrators back into teacher/administrator education programs
- encourage internships starting in the junior year
- counsel students into Critical Shortage areas (and away from "surplus" areas)
- figure out a way for individuals to complete two certificates in four years
- provide candidates information regarding the state's minimum course/credit hour requirements versus just degree requirements leading to a certificate
- train more speech therapists
- listen and respond to needs of school districts
- relinquish control of certification
- step up recruiting efforts and provide recruits with better counseling (i.e., in what areas they enter and which they should not enter)
- relax graduation requirements, especially in music, counseling, multiple certification programs, special education, and in General Education

3. **Superintendent's Suggestions for Licensure Reciprocity with Other States**

- accept certification from other states
- exempt qualified out-of-state teachers from PRAXIS
- grant full & automatic reciprocity with all states
- simplify & expedite licencing for out-of-state candidates

C. ASSISTANCE (MONETARY & WORK ENVIRONMENT) AND INCENTIVES

1. **Superintendent's Suggestions for Fiscal Incentives**

- bonuses for Critical Shortage areas (e.g., science and especially in rural areas)

  - signing bonuses and retention bonuses
  - salary supplements to keep high-quality employees
  - tuition reimbursements/financial assistance programs
  - forgiveable loans
  - tuition-free programs
  - loan-reduction programs
  - grants for Critical Needs areas
- DESE should pay part of salaries of teachers in Critical Needs areas (e.g., counselors, science)
- establish a statewide minimum for administrator salaries
- DESE should provide funding for Critical Needs recruiting
- all schools should be made eligible for Career Ladder funds
- across-the-board funding increases for rural schools
- fully fund all areas (e.g., special education, Class Within a Class, high-need areas, video grant, equipment)
- use state monies (e.g., a $0.01 sales tax or altering school funding structure to make it possible) to
  - support making year-round school an attractive option
  - provide incentive/assistance for individuals to become certified in additional areas (i.e., use state money to pay for tuition)
  - raise salaries for non-certificates staff
  - raise minimum teacher and administrator salaries
  - attract applicants in special education, library/media, fine arts, mathematics, & science
  - provide stipends and other signing bonuses for recruits from out-of-state
- reward administrators who work a longer year with more than one year's credit
- provide tuition reimbursement for ALL new teachers who serve in Critical Need areas (e.g., counselors, special education)
- *a regulatory twist on a fiscal incentive:* relax certification requirements for any Missouri teacher who commits to becoming certificated in a second (i.e., Critical Shortage) area

2. **Superintendent's Suggestions for Improving the Quality of the Work Environment**

- provide educators with better working conditions
- continue to seek legislation regarding safe schools
- provide districts help with discipline of special education students
- employ a team approach to supporting a teacher who is moving into a new field of teaching

D. PUBLIC RELATIONS/INFORMATION DISSEMINATION TO PROMOTE CAREERS IN EDUCATION, TO FACILITATE JOB ADVERTISING, AND TO CONNECT APPLICANTS WITH EMPLOYERS & POSITIONS

1. **Superintendent's Suggestions for Long-Term Solutions to Meeting Educator Recruitment and Hiring**

- provide assistance in finding new ways to advertize open positions
- create a system for notifying candidates of open positions
- create a statewide teacher recruitment and placement service
- centralize job postings
- create a statewide job fair
- provide placement services and then counseling for beginning teachers

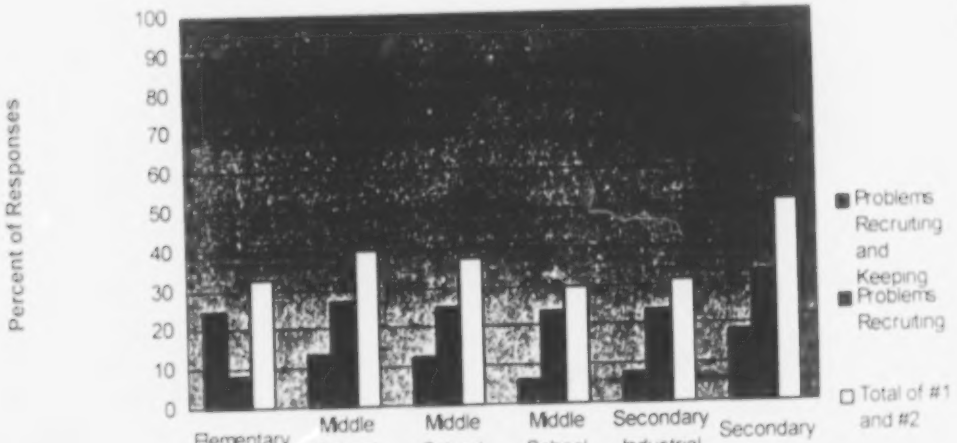
- facilitate districts' sharing of teachers (e.g., sharing a foreign language teacher when neither district needs a full FTE)
- improve the public's perceptions of teaching (i.e., improve image of teaching; and support and promote positive attitude toward public education)

QUESTION 7: During the Past Five Years, What Fields Have Presented Problems for Your District Relevant to Recruiting And/or Retaining Fully Certificated Teachers?

Respondents were presented all areas of certification issued by the state of Missouri. They were asked to indicate with an "R" any area for which they were having difficulty recruiting, with a "K" any area for which they were having difficulty keeping staff, and with both an "R" and a "K" any area for which they having trouble both recruiting and keeping staff. They were asked to leave blank all other areas.

Each of the following bar graphs (5a, 5b, 5c, & 5d) reflects a selection of certification areas exhibiting the most significant difficulties in recruiting and retaining appropriately certificated personnel. While all certification areas were included on the survey, the areas represented in the graphs are only those whose combination of "recruiting and keeping" (first bar) and "recruiting" (second bar) equaled 25% or greater (as reflected in the third bar in each set).

Figure 5a: District Recruitment and Retention By Certification Area



	Elementary Spanish	Middle School Math	Middle School Science	Middle School Industrial	Secondary Industrial Technolog	Secondary Math
Problems Recruiting and Keeping	24.5	13.3	12.5	6.4	7.8	18.2
Problems Recruiting	8.3	26.7	24.8	23.5	23.5	33.3
Total of #1 and #2	32.8	40	37.3	29.9	31.3	51.5

Certification Area

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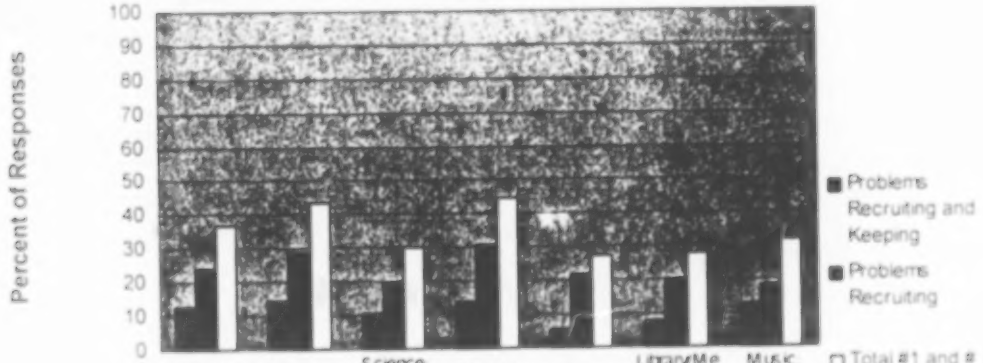
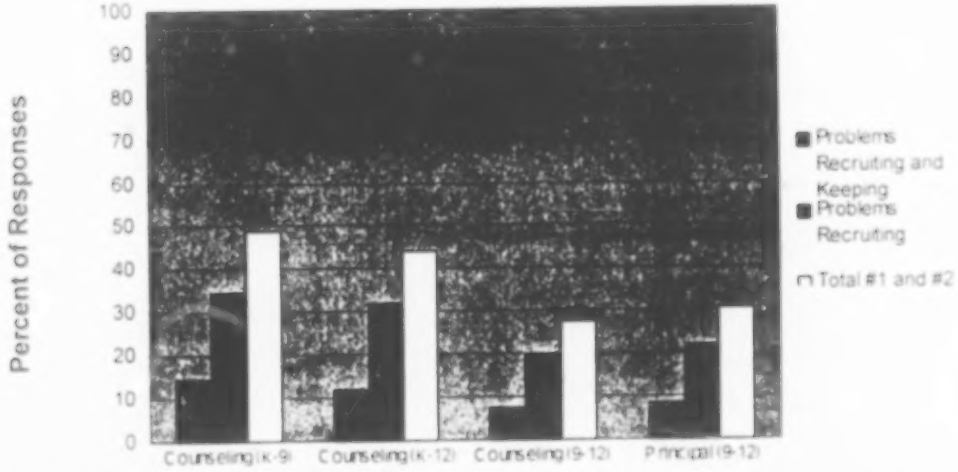
Figure 5b: District Recruitment and Retention By Certification Area



	Science Biology	Science Chemistry	Science Earth Science	Science Physics	K-12 Gifted	LibraryMedia Specialists	Music: Instrumental
Problems Recruiting and Keeping	12.9	14.6	10.8	14.2	5.5	8.1	13.1
Problems Recruiting	23.9	29.2	19.3	30.7	21.8	20.1	18.7
Total #1 and #2	36.8	43.8	30.1	44.9	27.3	28.2	31.8

Certification Area

Figure 5c: District Recuitment and Retention By Certification Area



	Counseling (K-9)	Counseling (K-12)	Counseling (9-12)	Principal (9-12)
Problems Recruiting and Keeping	14.6	11.9	7.6	8.5
Problems Recruiting	34.5	32	19.7	22
Total #1 and #2	49.1	43.9	27.3	30.5

Certification Area

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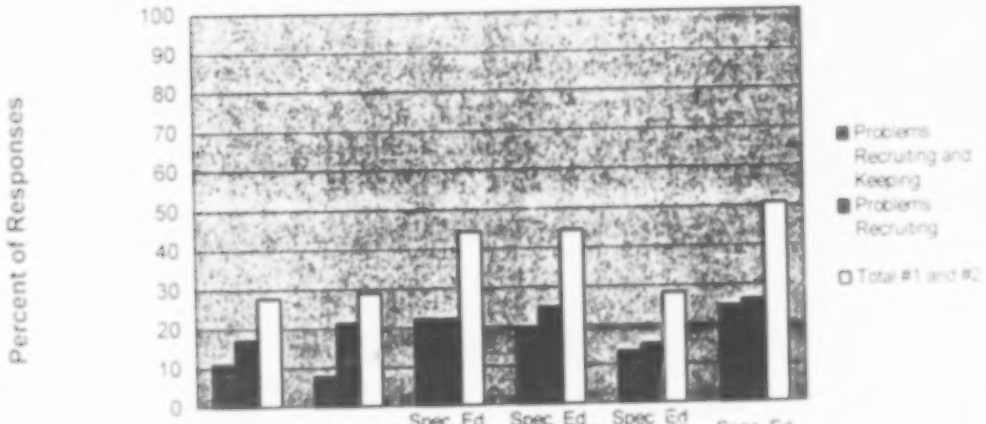
Figure 5d: District Recruitment and Retention By Certification Area



	Music Vocal	K-12 Spanish	Spec Ed Behavior Disordered	Spec Ed Mentally Handicapp	Spec Ed Phys Handicapp	Spec Ed Cross-Cat
Problems Recruiting and Keeping	10.8	7.6	22.2	19.7	13.1	24.6
Problems Recruiting	16.9	21.2	22	24.8	15	26.1
Total #1 and #2	27.7	28.8	44.2	44.5	28.1	50.7

Certification Area

Summary of Findings in the Preceding Four Graphs:

1. A number of areas appear to have significant supply problems indicated by 40% or more of the respondents reporting having difficulty in recruiting or recruiting and keeping personnel in the certification area: middle school and secondary mathematics; Unified Science with chemistry and physics endorsements; counseling (K-9 and K-12); and special education in three mild/moderate categories: behaviorally disordered, mentally handicapped, and cross-categorical.

2. Other areas falling just below this level of difficulty (i.e., in the 30 % to 40% range) include elementary Spanish; middle school science; middle school and secondary industrial technology; Unified Science with biology and earth science endorsements; instrumental music; and principal 9-12.

3. The next level, 25% to 30%, includes K-12 gifted; library/media specialist; counseling 9-12; vocal music; K-12 Spanish; special education for the physically handicapped.

Across all categories statewide exhibiting significant recruitment and retention difficulties, several trends may be noted. First, it is clear that all areas of science at both the secondary and middle school levels are experiencing difficulties. Second, most areas of special education are becoming hard to fill and keep filled (i.e., superintendents noted that Special Education teachers are (a) "burning out" earlier and (b) using Special Education as their entry point into the district from which they apply for transfer to the regular education classroom). Third, industrial technology, at both the middle school and secondary levels, present problems for districts.

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Fourth, both areas of music education are becoming hard to fill, and, fifth, Spanish teachers, counselors, and principals are in short supply to schools at all levels

Part II: Findings by DESE Supervisory Region and Findings by Census Classifications

Where the previous section (pages 3-19) provided a statewide perspective on survey responses, this section provides information on each survey question by the ten DESE Supervisory Regions and the ten Census Classifications. Questions 1, 2, 3, and 4 are presented in tables; question 7 is presented graphically for those certification areas identified by at least 25% of the respondents as presenting recruitment and retention difficulties and in a table for areas receiving fewer than 25% of the responses.

Readers should keep the following in mind:

1. when viewed within **Supervisory Region** data, St. Louis and Kansas City are contained within the "St. Louis" and "Kansas City" ***supervisory regions***
2. when viewed within **Census Classification** data, St. Louis and Kansas City stand separate from their surrounding metropolitan area; therefore, data for either of these districts will be either 100% (i.e., it was selected) or 0% (it was not selected).
3. several Census Classifications include a very small number of districts; therefore a high percent in a classification containing only one district (e.g., St. Louis or Kansas City) or four districts (e.g., Large Town) may overshadow a greater need in a classification including a great number of districts (e.g., rural non-metro includes 246 districts). See Attachments 2A and 2B of the statistical analysis report for listings of the school districts in each supervisory region and in each of the census classifications.

Question 1: *How would you describe your district's experience during the 1998-99 school year in staffing your district's classrooms with appropriately certificated teachers?*

Table 1A: Percent of Responses Regarding Availability by *Supervisory Region*

Supervisory Regions	More Than One Position with No Certificated Applicants	At Least One Position with No Certificated Applicants	One or More Positions with Few Applicants	No Positions with No Certificated Applicants	Do Not Know
St. Louis	21	24	50	3	3
Kansas City	12	37	39	12	0
Southwest	25	29	39	6	2
Central	41	29	27	4	0
Southeast	33	29	31	7	0
West Central	27	37	31	2	2
South Central	31	31	33	4	0
Northeast	37	24	33	6	0
North Central	22	42	36	0	0

Northwest	27	41	27	2	2

Table 1B: Percent of Responses Regarding Availability by *Census Classification*

Census Classification	More Than One Position with No Certificated Applicants	At Least One Position with No Certificated Applicants	One or More Positions with Few Applicants	No Positions with No Certificated Applicants	Do Not Know
St. Louis	100	0	0	0	0
Kansas City	100	0	0	0	0
Large City	50	25	25	0	0
Mid-Size City	50	33	17	0	0
Urban Fringe of Large City	20	27	47	5	2
Urban Fringe of Mid-Sized City	27	18	55	0	0
Large Town	33	0	67	0	0
Small Town	33	35	27	5	0
Rural Metro	17	39	30	13	2
Rural Non-Metro	30	31	34	3	1

Question 2: *How would you describe teacher turnover in your district during the 1998-1999 school year?*

Table 2A: Percent of Responses Regarding Turnover by *Supervisory Region*

Supervisory Regions	Overly Large Turnover: Much Difficulty	Significant Turnover: Some Difficulty	Some Turnover: No Difficulty	Little Turnover	Do Not Know
St. Louis	0	44	50	3	3
Kansas City	12	39	34	15	0
Southwest	8	35	47	8	2
Central	4	53	28	14	0
Southeast	11	47	27	15	0
West Central	12	45	33	8	2

South Central	7	40	31	22	0
Northeast	16	33	43	8	0
North Central	4	47	33	16	0
Northwest	12	48	30	8	2

Table 2B: Percent of Responses Regarding Turnover by *Census Classification*

Census Classification	Overly Large Turnover; Much Difficulty	Significant Turnover; Some Difficulty	Some Turnover; No Difficulty	Little Turnover	Do Not Know
St. Louis	0	100	0	0	0
Kansas City	100	0	0	0	0
Large City	25	50	25	0	0
Mid-Size City	16	50	33	0	0
Urban Fringe of Large City	2	53	37	6	2
Urban Fringe of Mid-Sized City	0	46	27	27	0
Large Town	0	67	33	0	0
Small Town	9	46	33	12	0
Rural Metro	13	24	46	15	2
Rural Non-Metro	10	43	34	12	1

Question 3: *How did you resolve any difficulties you had in hiring appropriately certificated teachers for your district's classrooms?*

Table 3A1: Percent of Responses for Each of the Four Actions Provided and "Other" by *Supervisory Region*

Supervisory Regions	Provisional Certificate	Recruited from a Neighboring District	Increased Class Size	Distance-Learning	Canceled Class	Other
St. Louis	38	30	5	5	5	17
Kansas City	35	28	6	5	6	19
Southwest	34	28	6	8	3	21
Central	38	18	11	5	5	23
Southeast	33	29	6	9	10	14
West Central	30	21	6	11	5	27
South Central	32	23	13	4	11	18
Northeast	34	24	7	8	6	22
North Central	30	20	3	8	9	30
Northwest	26	23	7	8	12	24

Table 3A2: Percent of Responses for Each of the Four Actions Provided and "Other" by *Census Classifications*

Supervisory Regions	Provisional Certificate	Recruited from a Neighboring District	Increased Class Size	Distance-Learning	Canceled Class	Other
St. Louis	25	0	25	25	0	25
Kansas City	25	25	0	0	25	25
Large City	57	29	0	0	0	14
Mid-Size City	40	13	13	7	13	13
Urban Fringe of Large City	36	35	5	3	4	17
Urban Fringe of Mid-Sized City	31	44	6	0	6	13
Large Town	33	67	0	0	0	0
Small Town	36	29	6	4	6	19

Rural Metro	34	24	7	6	7	22
Rural Non-Metro	30	19	8	10	8	25

Table 3B1: Percent of Major Categories of "Other" Actions Taken by *Supervisory Region*[1]

Supervisory Regions	Altered Class Schedules or Enrollment Structures	Altered Recruitment Practices	Sought Alternative Certification	Hired Non-Regulation Personnel	Hired Retirees or Part-Time Qualified Professionals
St. Louis	0	18	37	27	9
Kansas City	6	13	25	50	6
Southwest	0	12	29	59	0
Central	14	5	19	48	9
Southeast	7	14	28	36	14
West Central	0	9	19	63	9
South Central	6	12	6	70	6
Northeast	13	9	13	43	22
North Central	5	5	19	62	9
Northwest	22	11	19	37	11

Table 3B2: Percent of Major Categories of "Other" Actions Taken by *Census Classification*[2]

Supervisory Regions	Altered Class Schedules or Enrollment Structures	Altered Recruitment Practices	Sought Alternative Certification	Hired Non-Regulation Personnel	Hired Retirees or Part-Time Qualified Professionals
St. Louis	0	0	100	0	0
Kansas City	0	0	0	100	0
Large City	100	0	0	0	0
Mid-Size City	50	0	0	50	0

[1] 9% of St. Louis Region and 5% of the Central Region districts exercised an "other" action; see page 7 ("Other Actions Necessitated by Shortages")

[2] 5% of Urban Fringe of Large City and 3% of Small Town districts exercised an "other" action; see page 7 ("Other Actions Necessitated by Shortages")

Urban Fringe of Large City	9	14	29	29	14
Urban Fringe of Mid-Sized City	0	0	100	0	0
Large Town[3]					
Small Town	4	9	31	50	3
Rural Metro	9	5	24	62	0
Rural Non-Metro	8	11	13	54	14

Question 4: ***Based on your experiences for the 1999-2000 school year, is it getting more difficult, less difficult, or about the same difficulty to staff your district's classrooms?***

Table 4A: Percent of Responses Regarding Degree of Difficulty by *Supervisory Region*

Supervisory Regions	More Difficult	Less Difficult	About the Same Difficulty
St. Louis	68	3	29
Kansas City	92	0	8
Southwest	83	0	17
Central	96	0	4
Southeast	89	2	9
West Central	94	0	6
South Central	89	0	11
Northeast	80	0	20
North Central	87	0	13
Northwest	98	0	2

Table 4B: Percent of Responses Regarding Degree of Difficulty by *Census Classification*

Census Classification	More Difficult	Less Difficult	About the Same Difficulty
St. Louis	0	100	0
Kansas City	0	0	100

[3] Data for Large Town districts is not reportable.

Large City	100	0	0
Mid-Size City	83	0	17
Urban Fringe of Large City	80	0	20
Urban Fringe of Mid-Sized City	100	0	0
Large Town	100	0	0
Small Town	92	0	8
Rural Metro	80	0	20
Rural Non-Metro	90	1	9

Question 5: ***What problems, barriers, and/or regulations impeded your ability to staff your district's classrooms with appropriately certificated classroom teachers?***

Note: See parallel discussion in Part I of this report (page 9-10); significant differences could not be detected among either supervisory regions or census classifications.

Question 6: ***What state-level policies, services, and/or strategies that DESE could implement would help your district address the problems or issues raised in the questions above?***

Note: See parallel discussion in Part I of this report (page 11-15); significant differences could not be detected among either supervisory regions or census classifications.

Question 7: ***During the past five years, what fields have presented problems for your district relevant to recruiting and/or retaining fully certificated teachers? Put an "R" (for "recruit") in all areas for which you had difficulty recruiting; put a "K" (for "retain" or "keep") in all areas for which you had difficulty retaining teachers; put both an "R" and a "K" if you had trouble both recruiting and retaining; leave blank areas in which you had no problems.***

The following charts (pages 29 through 54) provide a snapshot of how district superintendents (or their representatives) responded to the question. As was explained in Part I, only those certificates indicated by at least 25% of the respondents as presenting them difficulty in recruiting and retaining qualified staff (both instructional and non-instructional, certificated staff) were reported in detail. Readers may note that Part I provided statewide perspective for 23 certificates; analysis of regional and census classification data suggested that an additional four certificates be added to the discussion (i.e., a certificate for which several regions/census classifications noted it as being a particular problem). For each of the 27 certificate areas, two charts are presented: the first (at the top of the page) chart disaggregates the response data by the ten DESE Supervisory Regions of the state; the second chart (at the bottom of the page) presents the data by U.S. government Census Classifications. This means of displaying the data affords the opportunity to see data relevant to any given region of the state (e.g., northwest, southeast, St. Louis, south central) or by the size or type of community represented (e.g., small town, rural non-metro, large city, urban fringe of mid-sized city). Responses to all other certificates are summarized in a table following the charts (pages 54-59).

Although the statewide perspective analysis (Part I) appears to hold accurate for the more discrete perspective presented here in Part II, the region/census classification analysis does in a few instances alert the state to particular problems in particular regions or types of communities. For example,

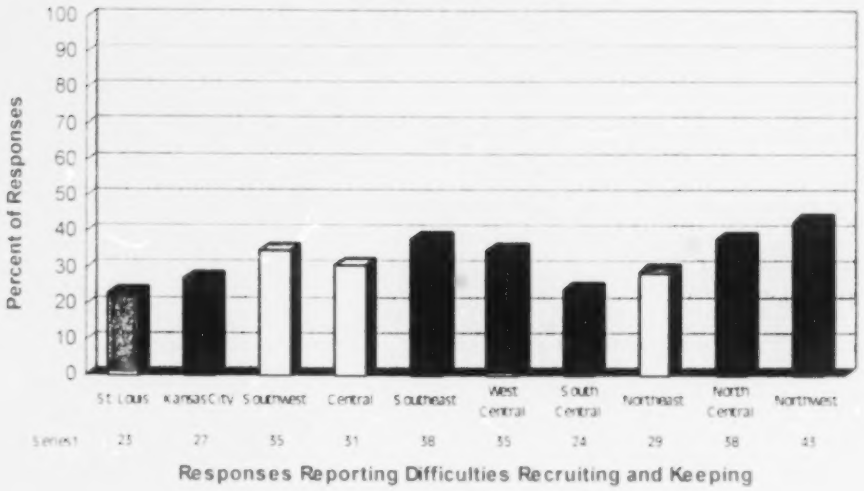
- in many instances (e.g., K-12 Gifted Education) census classification data corroborate that the St. Louis and Kansas City school districts are experiencing more acute recruitment and retention problems than are being experienced by the broader metropolitan areas within which they reside (i.e., the Supervisory Region); occasionally (e.g., for elementary Spanish) the situation is reversed.
- as is indicated by Figure 3.9 (page 32 of the "Statistical Analysis" report), examination of certificate areas by census classifications does tend to confirm that recruitment and retention problems are more acute in the St. Louis and Kansas City school districts and in the rural metro and rural non-metro school districts. That is, inter-district mobility of teachers is increasing the recruitment and retention problem for those districts that are providing teachers to the other types of communities/districts (e.g., large towns, urban fringe of large- and mid-size cities, etc.).

Certification Areas Represented in the Following Charts (i.e., those identified by 25% or more of the respondents):

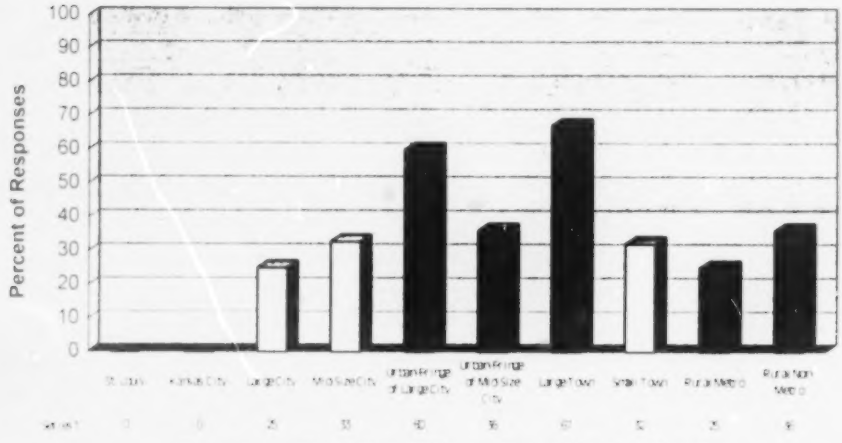
- Spanish (Elementary) (p. 29)
- Spanish (K-12) (p. 30)
- Gifted Education (K-12) (p. 31)
- Music: Vocal (K-12) (p. 32)
- Music: Instrumental (K-12) (p. 33)
- Library/Media Specialist (K-12) (p. 34)
- Middle School Industrial Technology (p. 35)
- Secondary Industrial Technology (p. 36)
- Middle School Science (p. 37)
- Unified Science: Biology Endorsement (p. 38)
- Unified Science: Chemistry Endorsement (p. 39)
- Unified Science: Earth Science Endorsement (p. 40)
- Unified Science: Physics Endorsement (p. 41)
- Middle School Mathematics (p. 42)
- Secondary Mathematics (p. 43)
- Middle School Family & Consumer Science (p. 44)
- Secondary Family & Consumer Science (p. 45)
- Counselor (9-12) (p. 46)
- Counselor (K-12) (p. 47)
- Counselor (K-9) (p. 48)
- Principal (9-12) (p. 49)
- Spec. Education: Severely Developmentally Disabled Endorsement (p. 50)
- Special Education: Cross-Categorical Endorsement (p. 51)
- Special Education: Physical and Other Health Impairments (POHI) Endorsement (p.52)
- Special Education: Mentally Handicapped Endorsement (p. 53)
- Special Education: Behavior Disordered Endorsement (p. 54)

All other certification areas (i.e., those identified by fewer than 25% of the respondents) are presented in a table following the charts (pages 55-61); the table shows percent of responses by Supervisory Region and by Census Classification.

Recruitment and Retention Experience for Elementary Spanish by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Elementary Spanish Education by Census Classifications (1998-1999)



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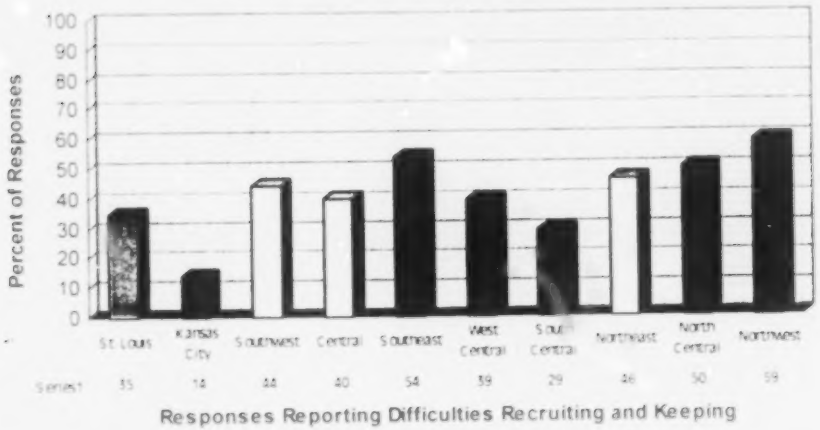
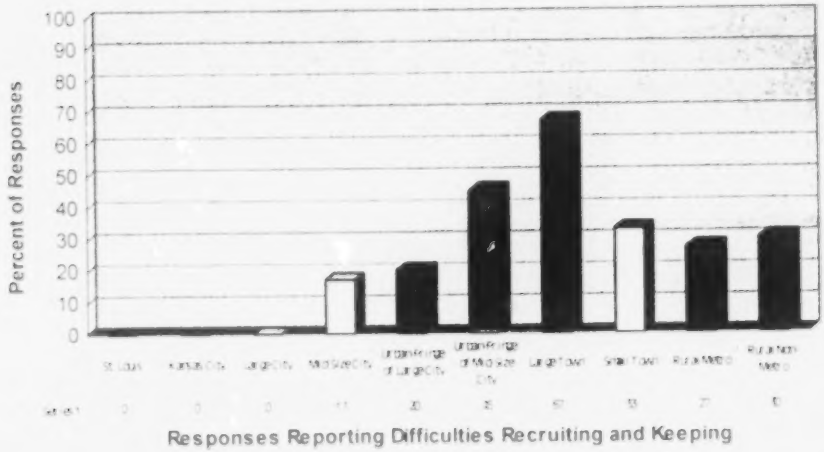
Recruitment and Retention Experience for K-12 Spanish Education by Supervisory Region (1998-1999)



Recruitment and Retention Experience for K-12 Spanish Education by Census Classification (1998-1999)



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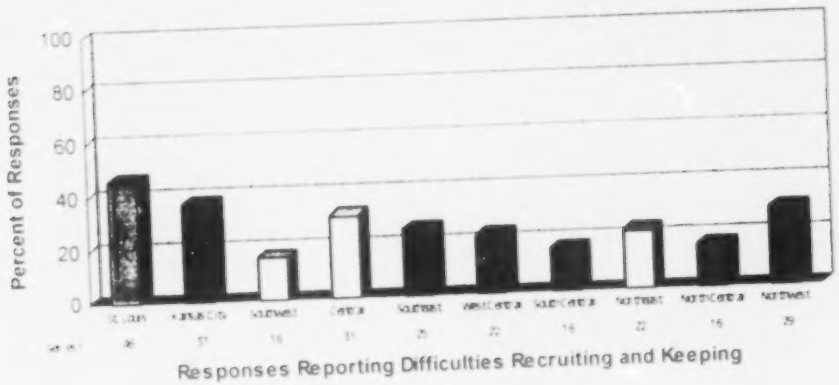
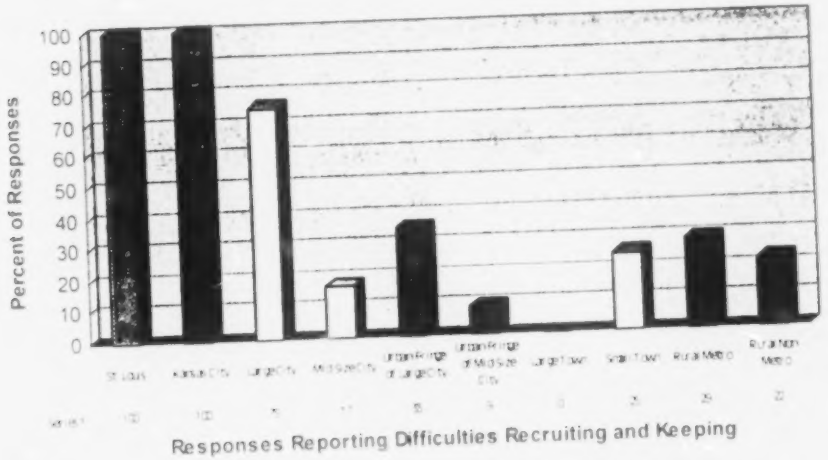
Recruitment and Retention Experience for K-12 Gifted Education by Supervisory Region (1998-1999)



Recruitment and Retention Experience for K-12 Gifted Education by Census Classification (1998-1999)



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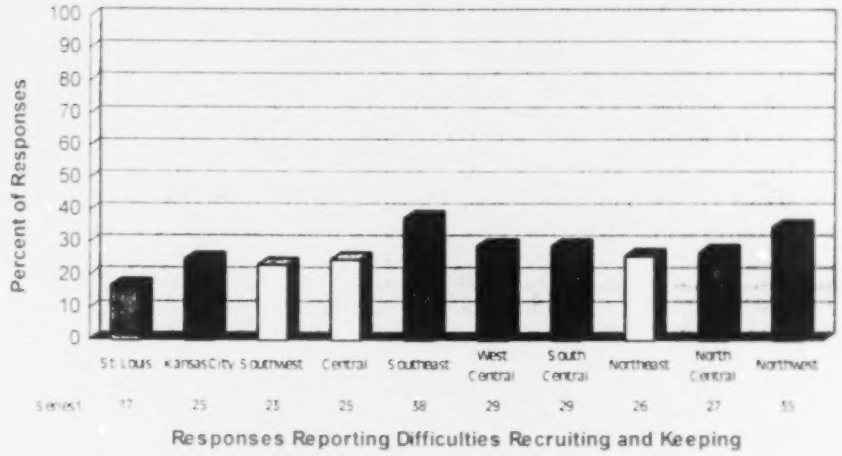
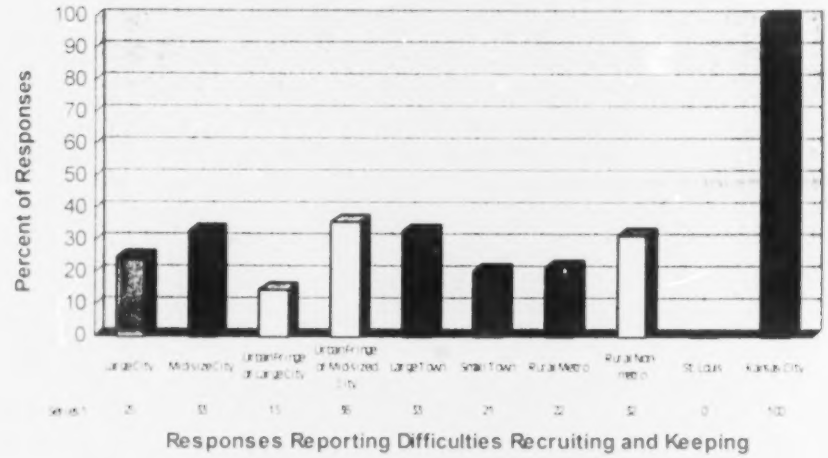
Recruitment and Retention Experience for Vocal Music (K-12) by Supervisory Region
(1998-99)



Recruitment and Retention Experience for Vocal Music by Census Classification
(1998-99)



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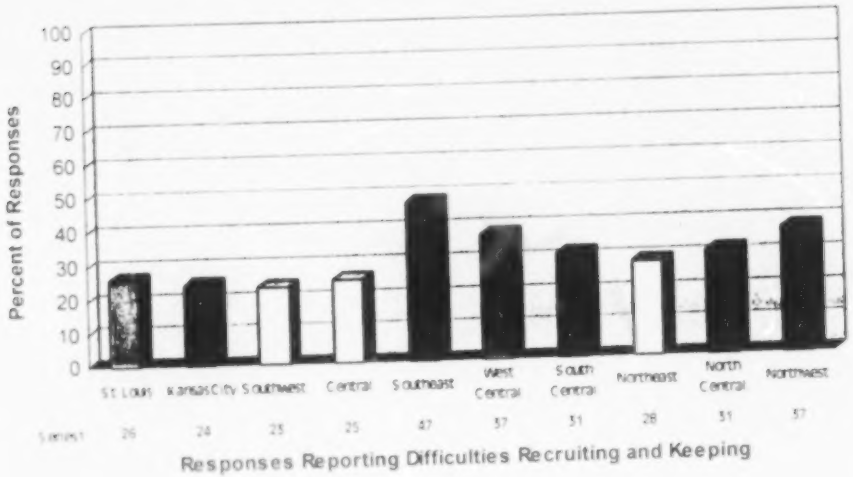
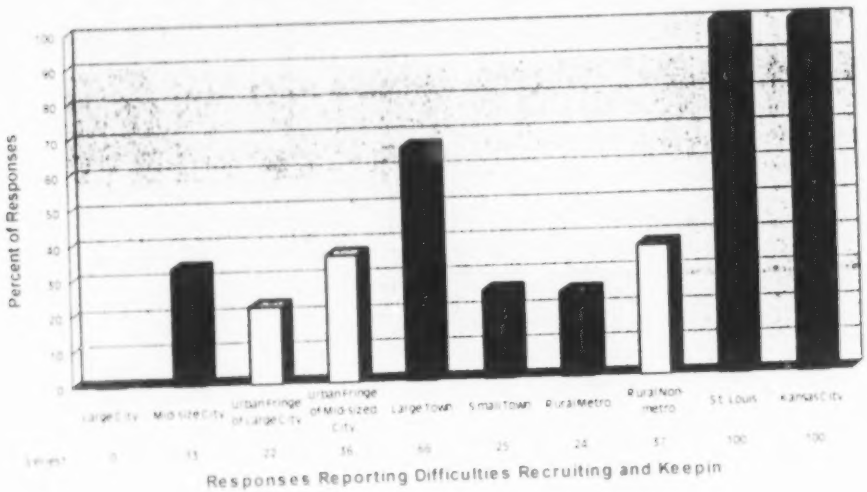
Recruitment and Retention Experience for Instrumental Music (K-12) by Supervisory Region (1998-99)



Recruitment and Retention Experiences for Instrumental Music by Census Classification (1998-99)



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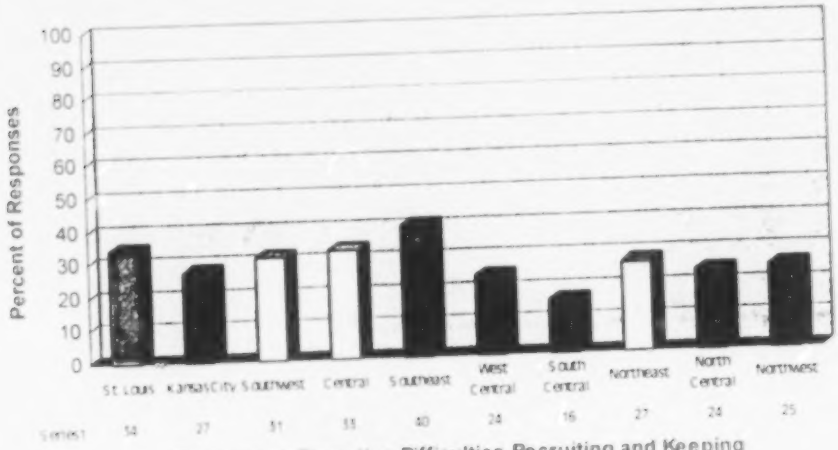
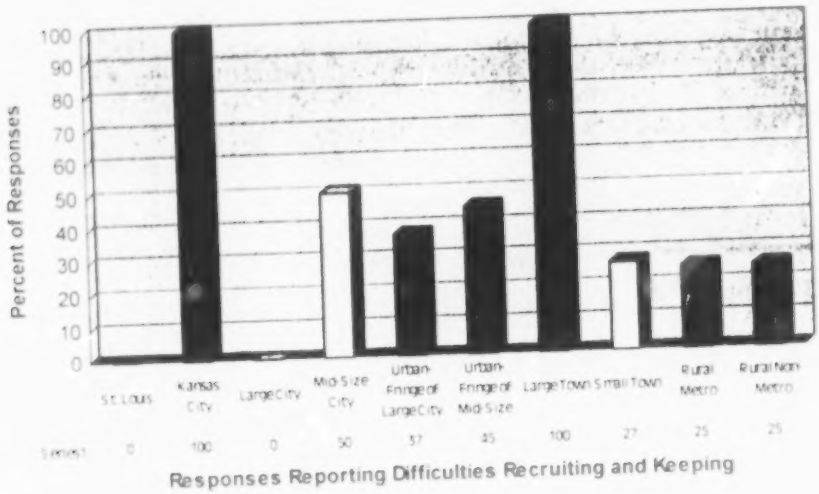
Recruitment and Retention Experience for Library/Media Specialist by Supervisory Region (1998-1999)



Recruitment and Retention Experience for K-12 Library/Media Specialist by Census Classification (1998-1999)



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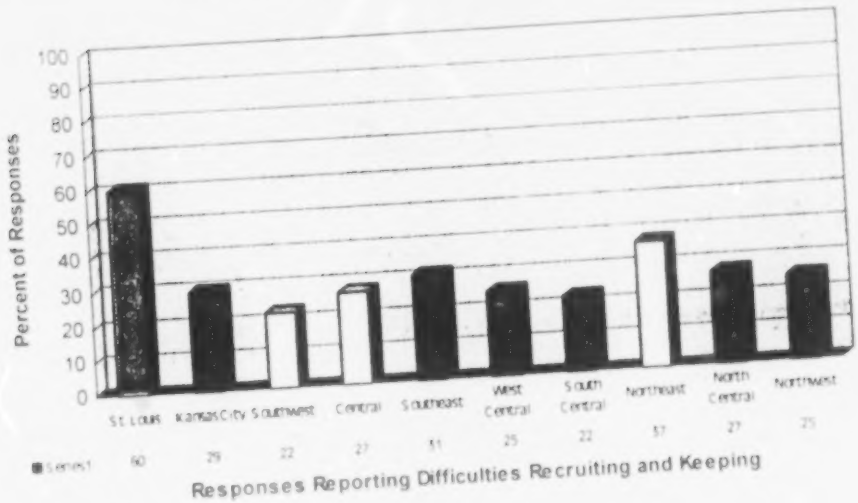
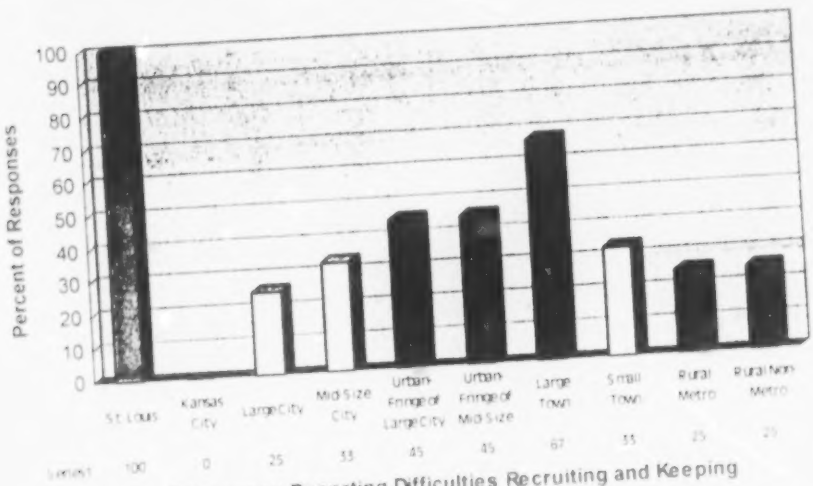
Recruitment and Retention Experience for Middle School Industrial Technology Education by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Middle School Industrial Technology by Census Classification (1998-1999)



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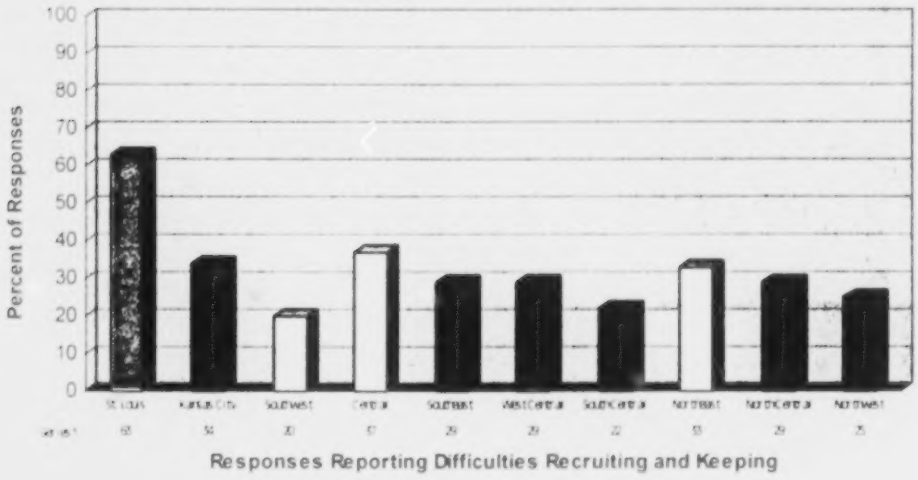
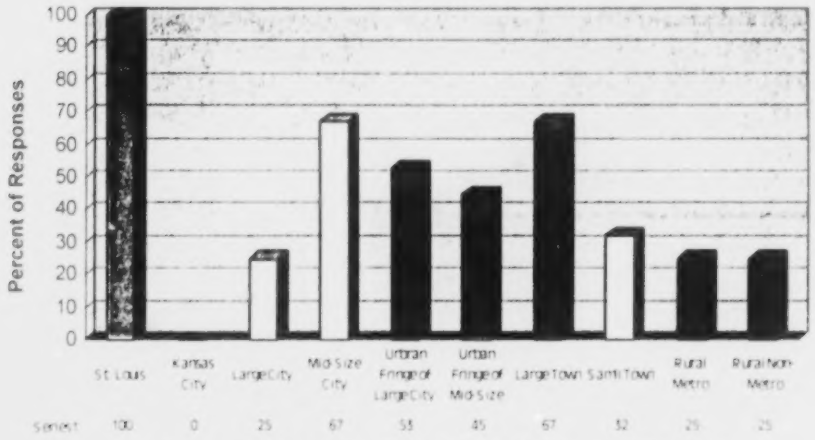
Recruitment and Retention Experience for Secondary Industrial Technology by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Secondary Industrial Technology by Census Classification (1998-1999)



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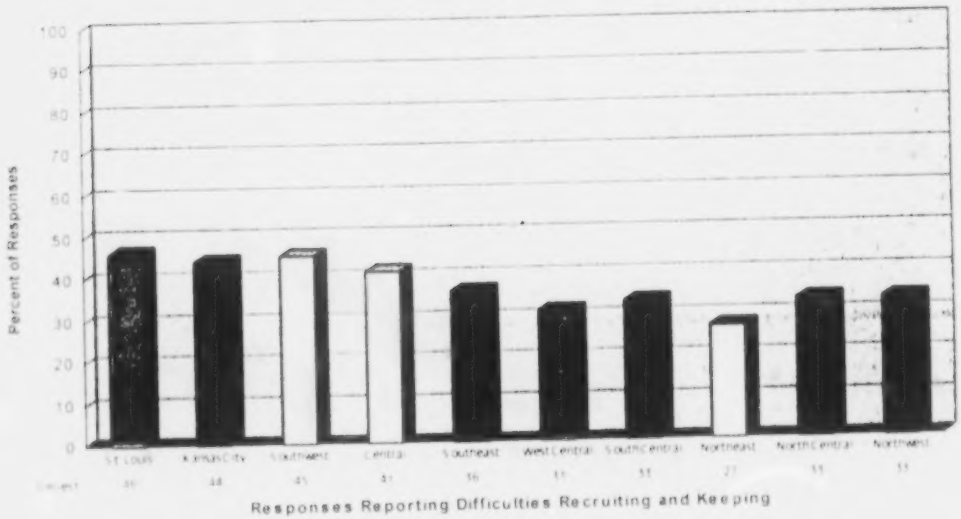
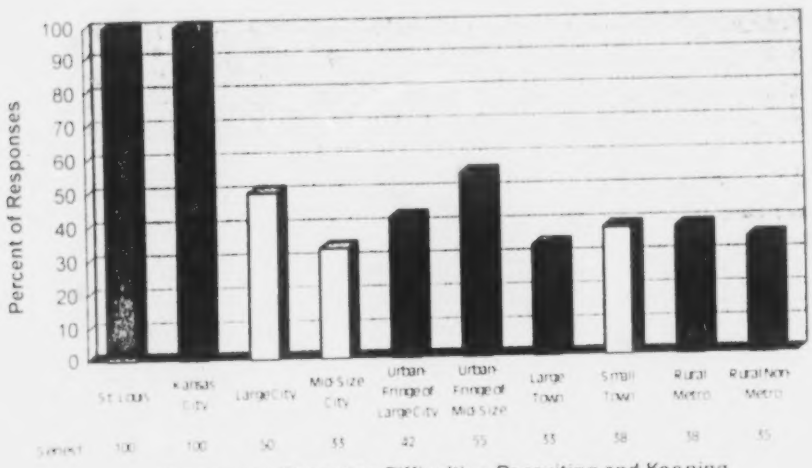
Recruitment and Retention Experience for Middle School Science Education by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Middle School Science by Census Classification (1998-1999)



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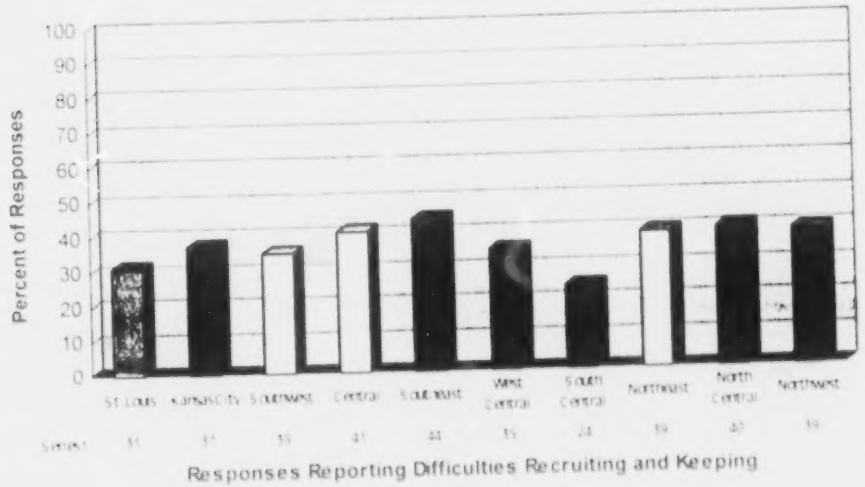
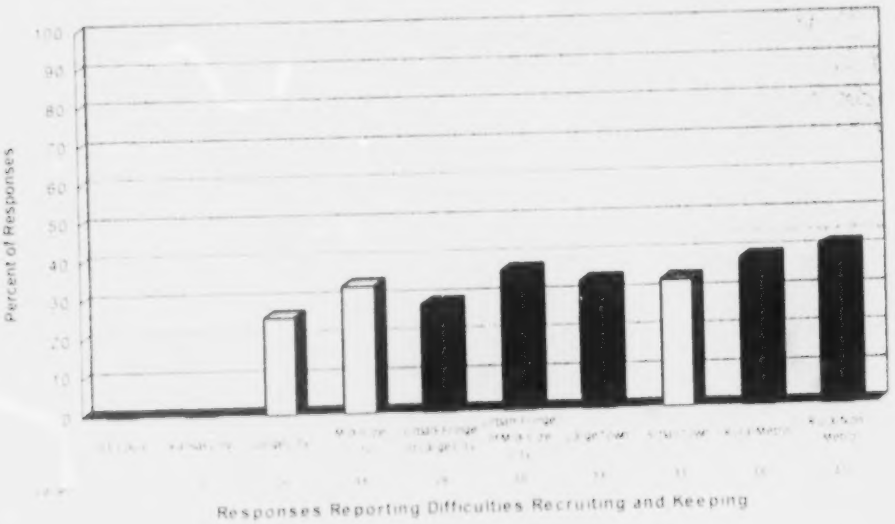
Recruitment and Retention Experience for Unified Science: Biology Endorsement by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Unified Science: Biology Endorsement by Census Classification (1998-1999)



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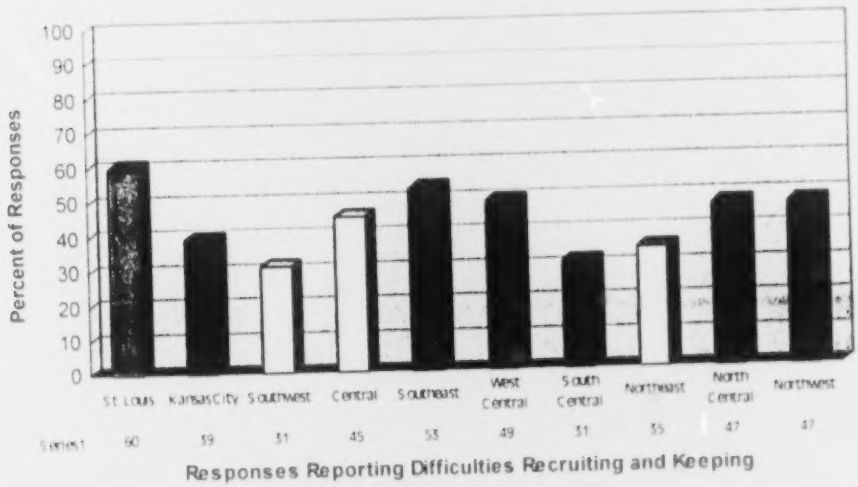
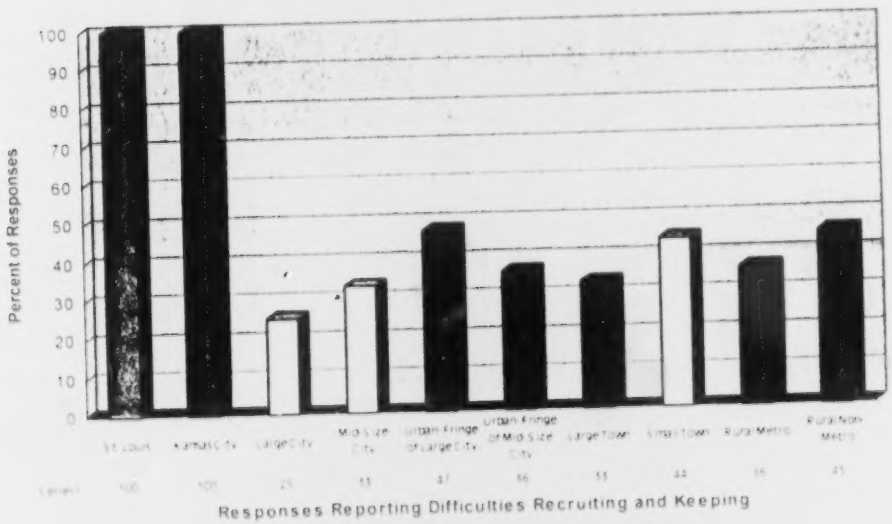
Recruitment and Retention Experience for Unified Science: Chemistry Endorsement by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Unified Science: Chemistry Endorsement by Census Classification (1998-1999)



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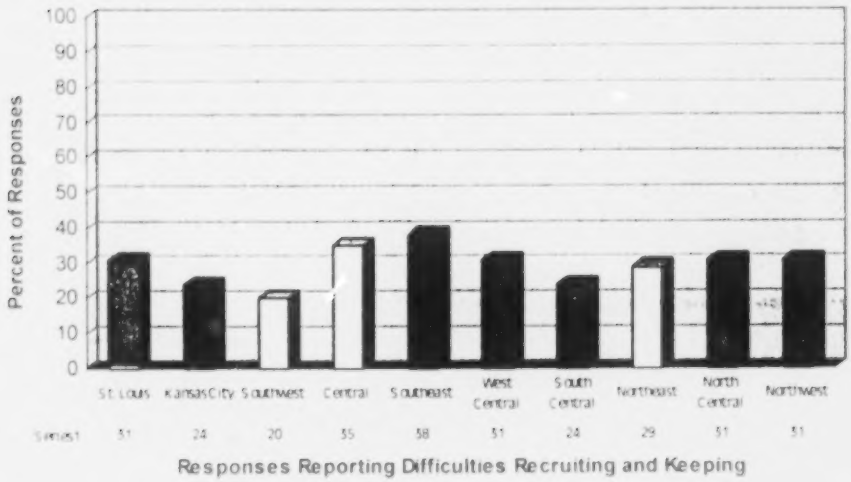
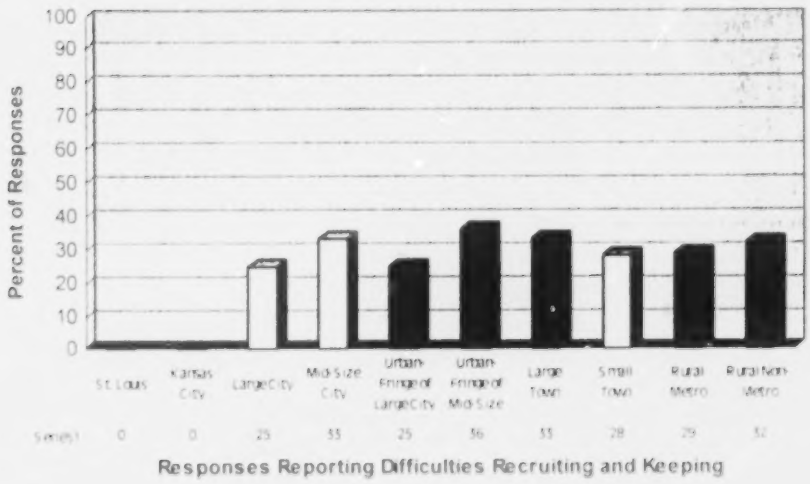
Recruitment and Retention Experience for Unified Science: Earth Science Endorsement by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Unified Science: Earth Science Endorsement by Census Classification (1998-1999)



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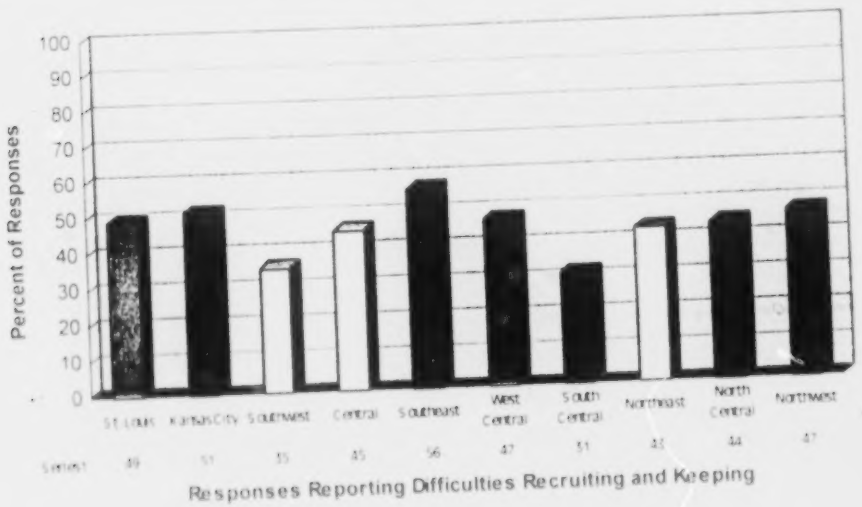
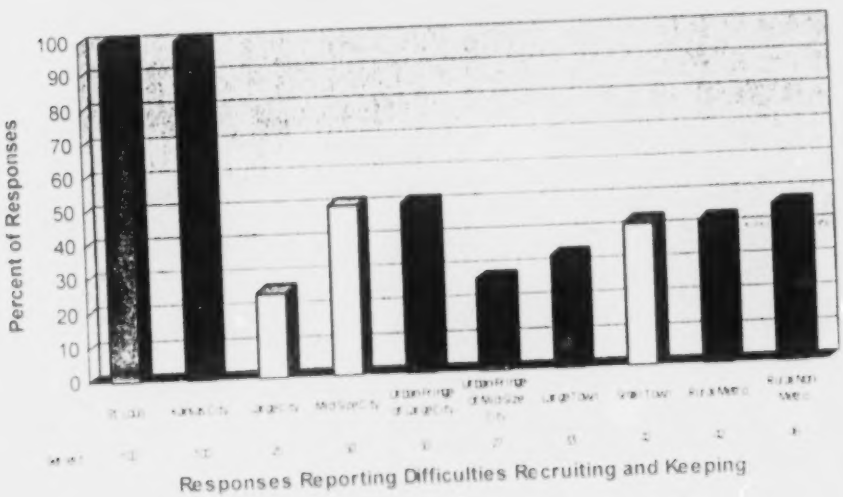
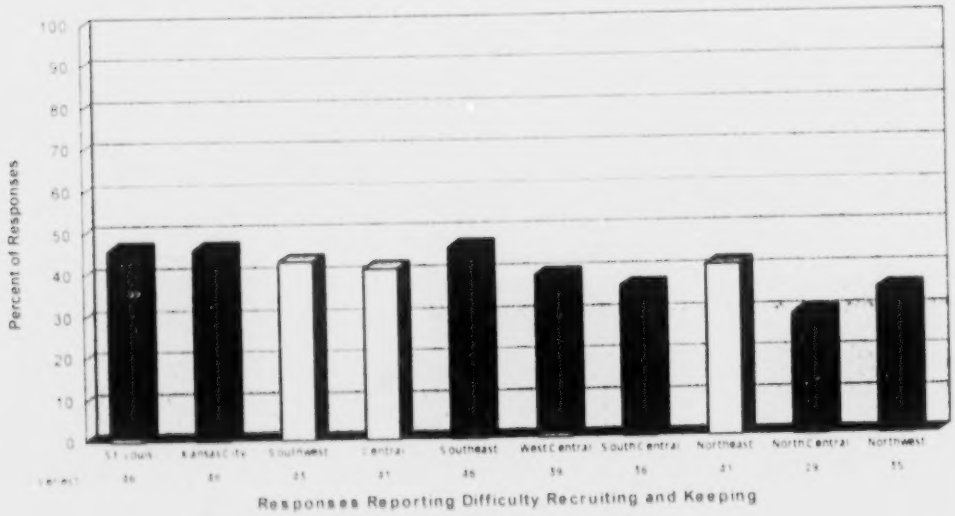
Recruitment and Retention Experience for Unified Science: Physics Endorsement by Supervisory Region (1998-1999)



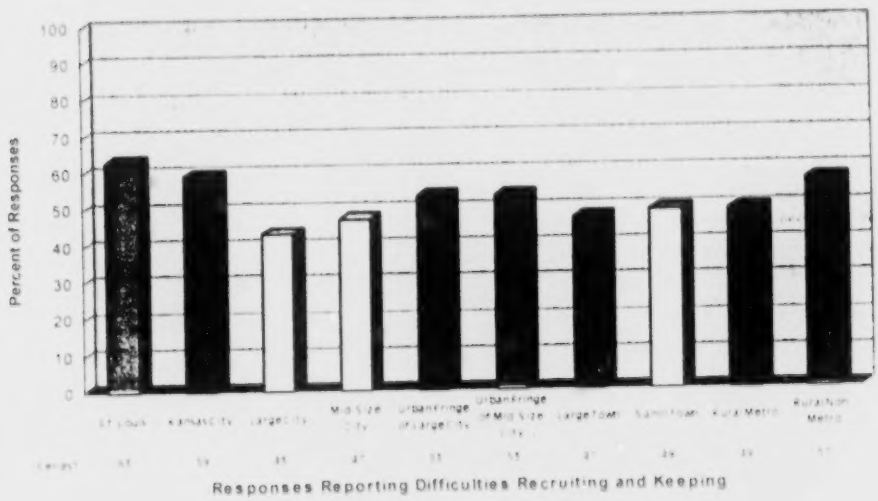
Recruitment and Retention Experience for Unified Science: Physics Endorsement by Census Classification (1998-1999)



Recruitment and Retention Experience for Middle School Mathematics by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Middle School Mathematics by Census Classification (1998-1999)



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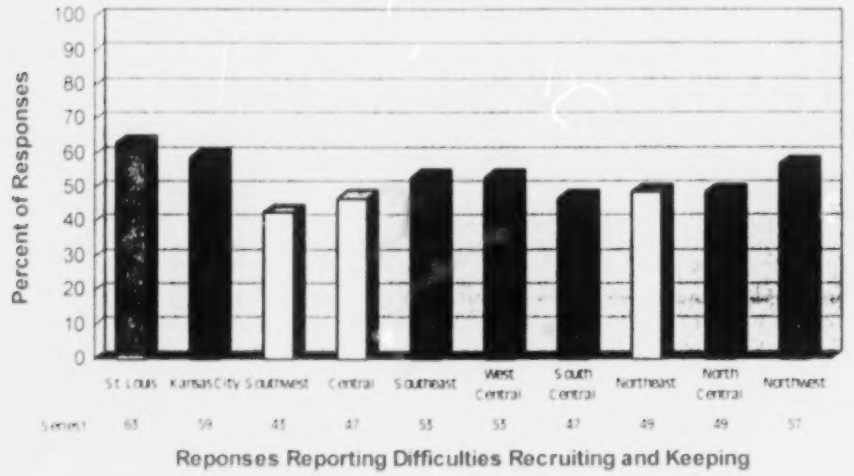
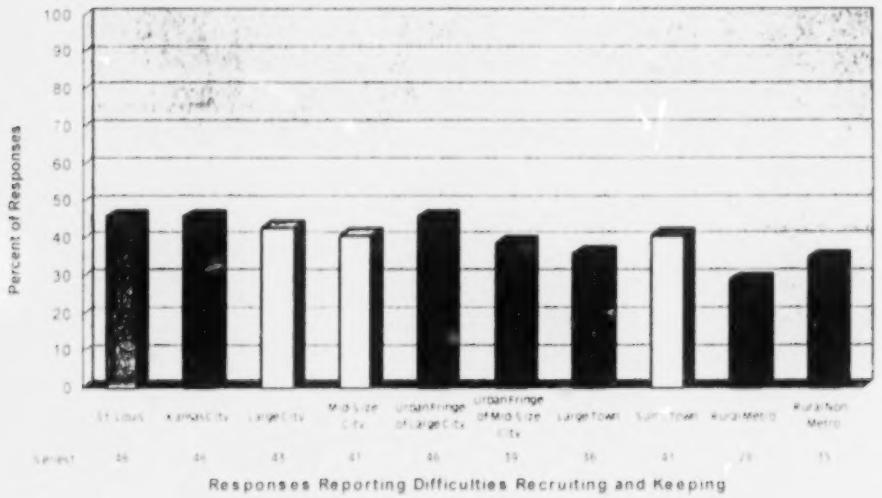
Recruitment and Retention Experience for Secondary Mathematics by Supervisory Region (1998-99)



Recruitment and Retention Experience for Secondary Mathematics by Census Classification (1998-1999)



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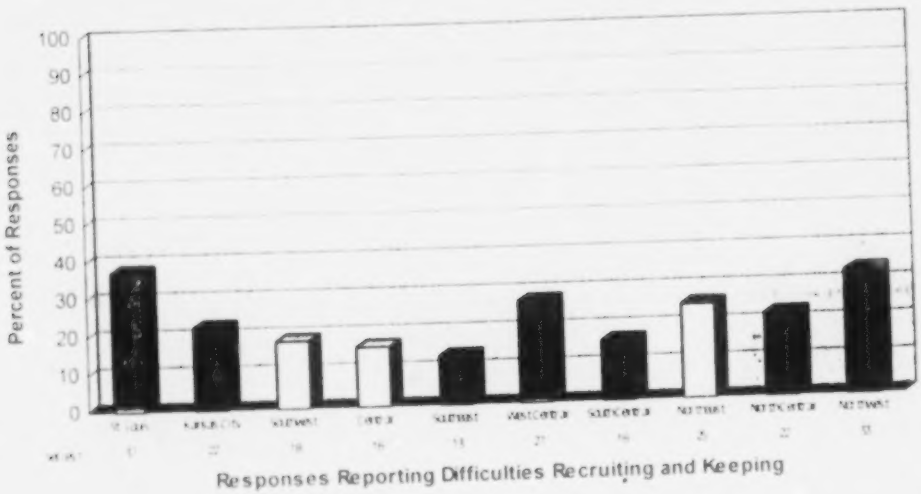
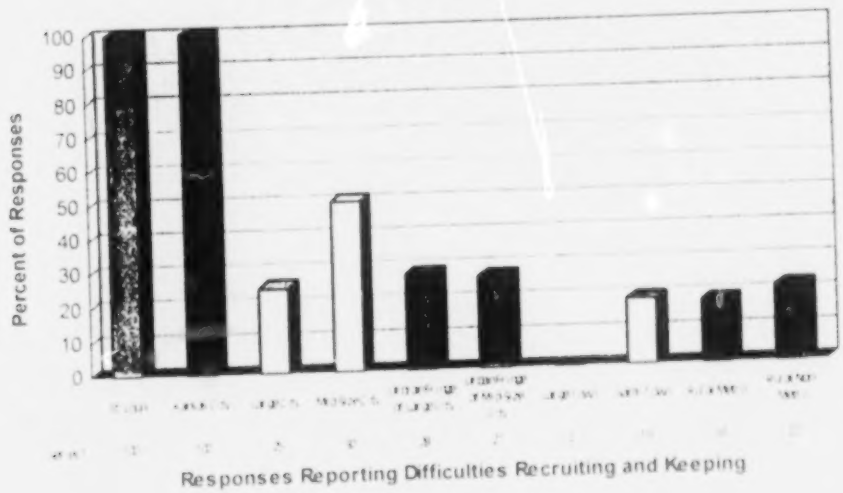
Recruitment and Retention Experience for Middle School Family & Consumer Science by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Middle School Family & Consumer Science by Census Classification (1998-1999)



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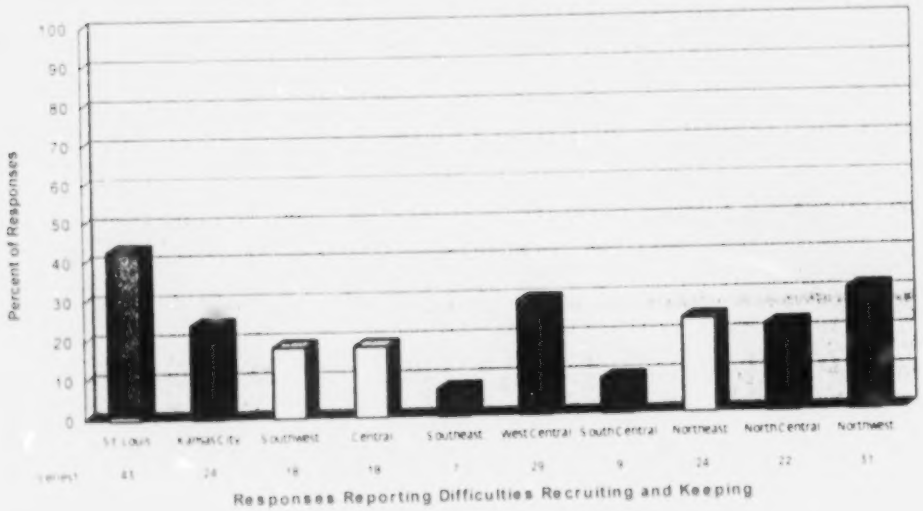
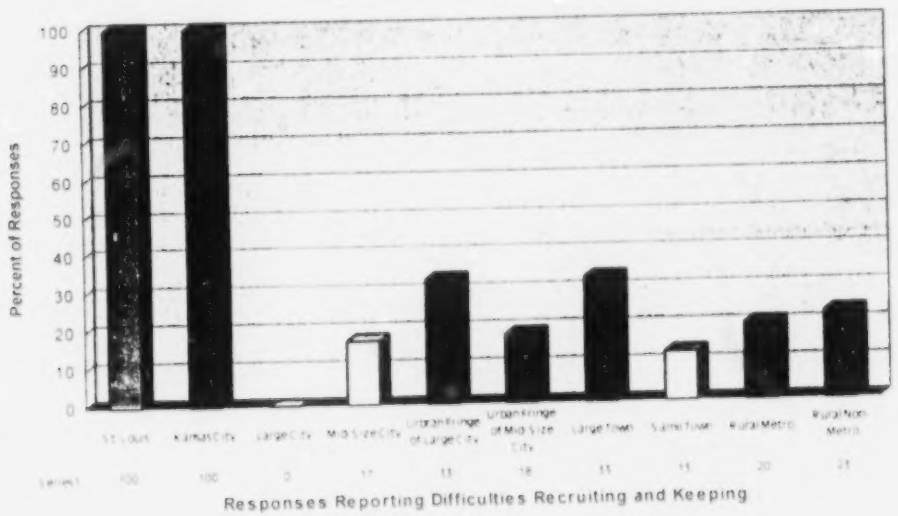
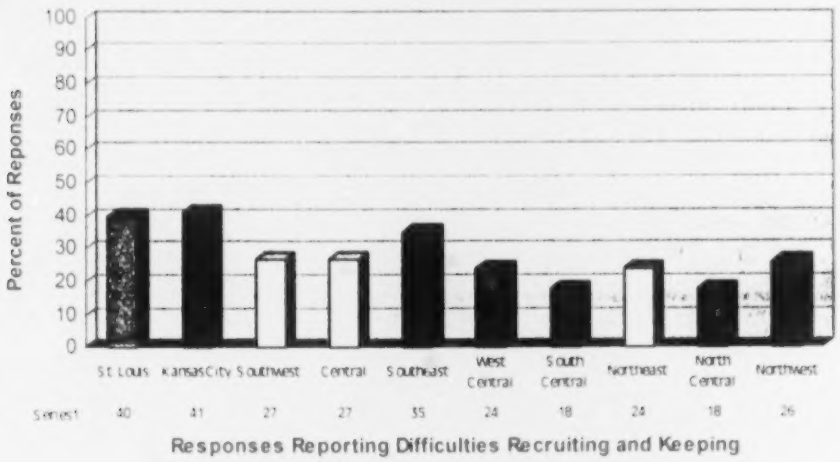
Recruitment and Retention Experience for Secondary Family & Consumer Science by Supervisory Region (1998-1999)



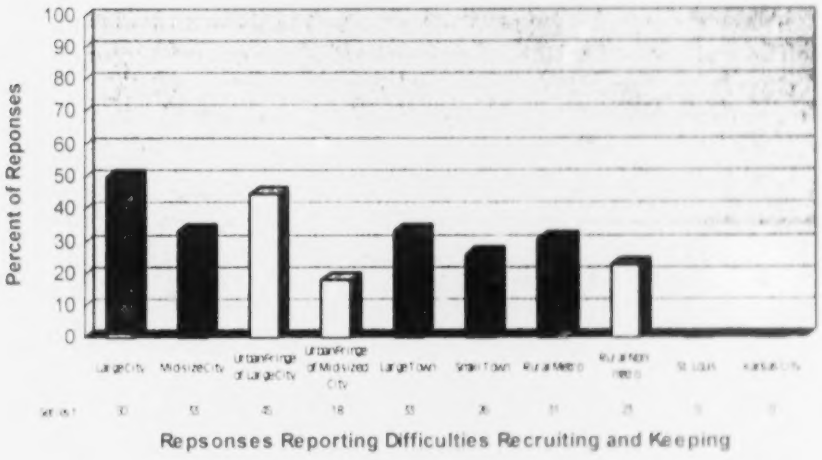
Recruitment and Retention Experience for Secondary Family & Consumer Science by Census Classification (1998-1999)



Recruitment and Retention Experiences for Counselor (9-12) by Supervisory Region (1998-99)



Recruitment and Retention Experiences for Counselor (9-12) by Census Classification (1998-99)



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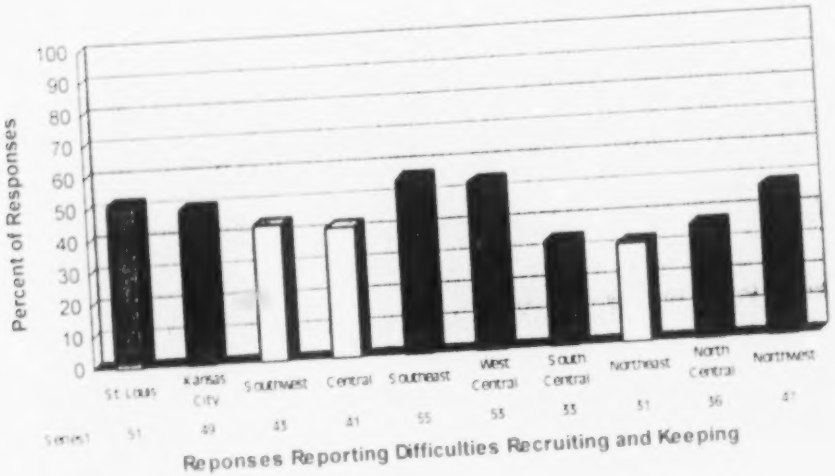
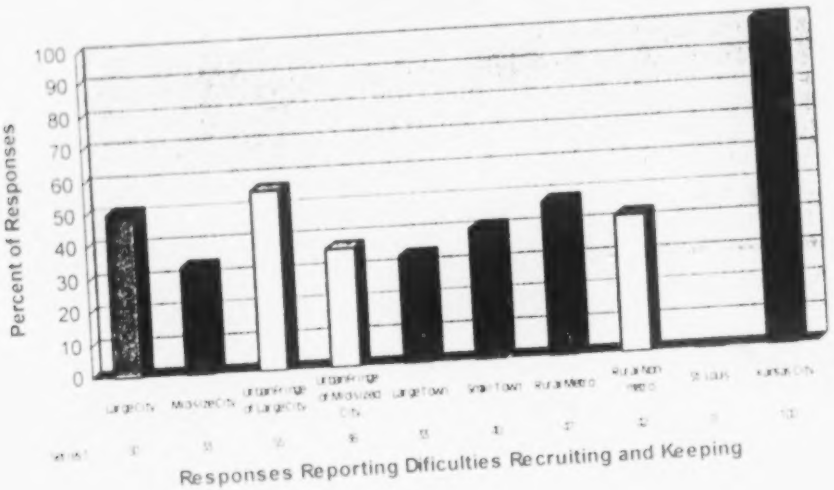
Recruitment and Retention Experience for Counselor (K-12) by Supervisory Region (1998-99)



Recruitment and Retention Experience for Counselor (K-12) by Census Classification (1998-99)



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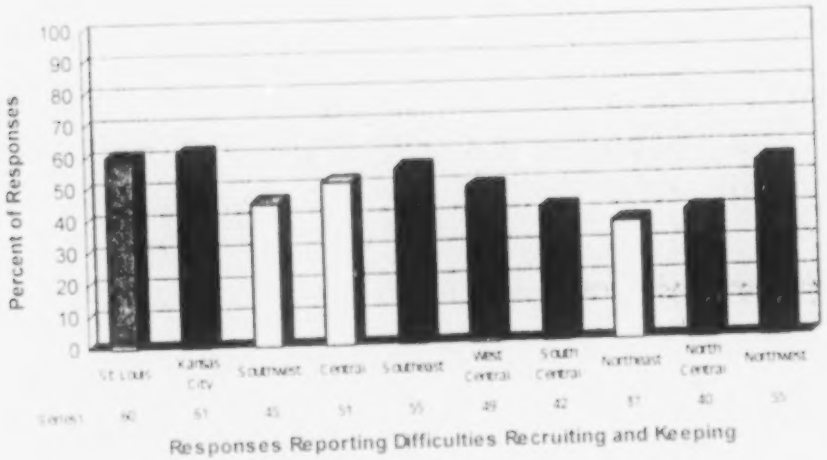
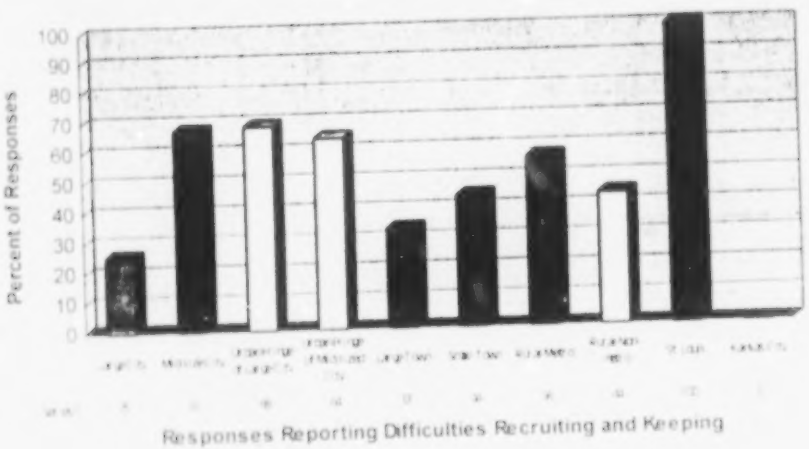
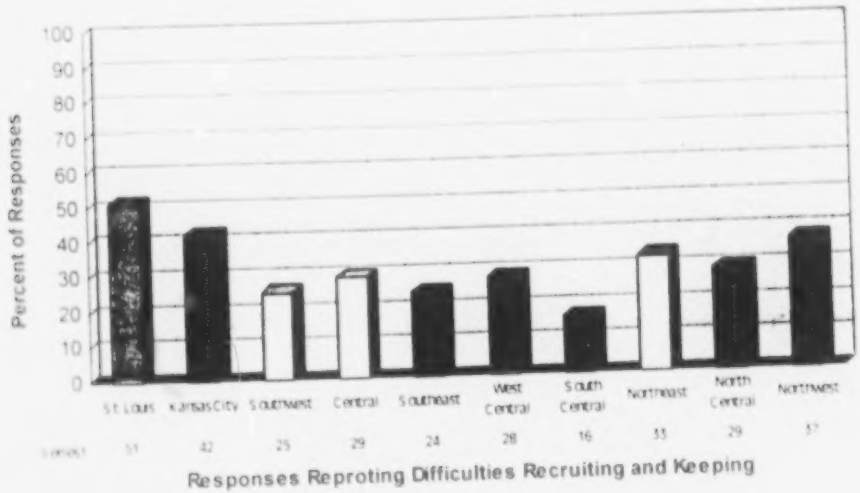
Recruitment and Retention Experience for Counselors (K-9) by Supervisory Region
(1998-99)



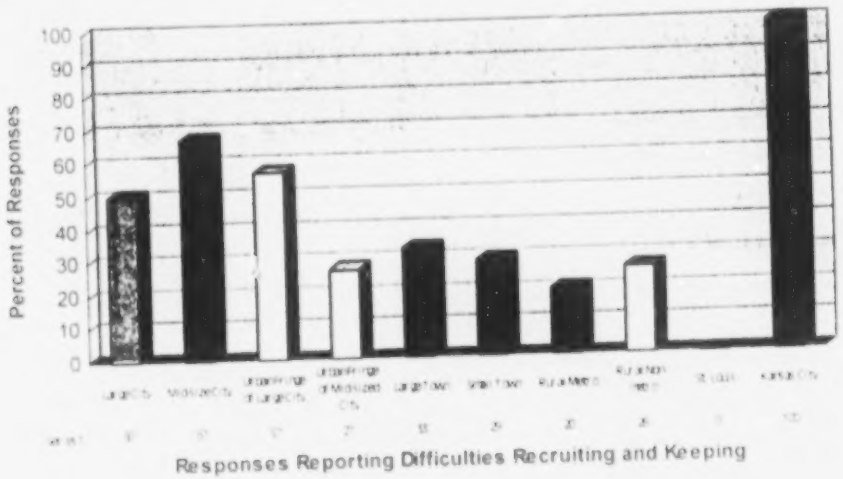
Recruitment and Retention Experience for Counselor (K-9) by Census Classification
(1998-99)



Recruitment and Retention Experience for Prinicpals (9-12) by Supervisory Region



Recruitment and Retention Experience for Principal (9-12) by Census Classification (1998-99)



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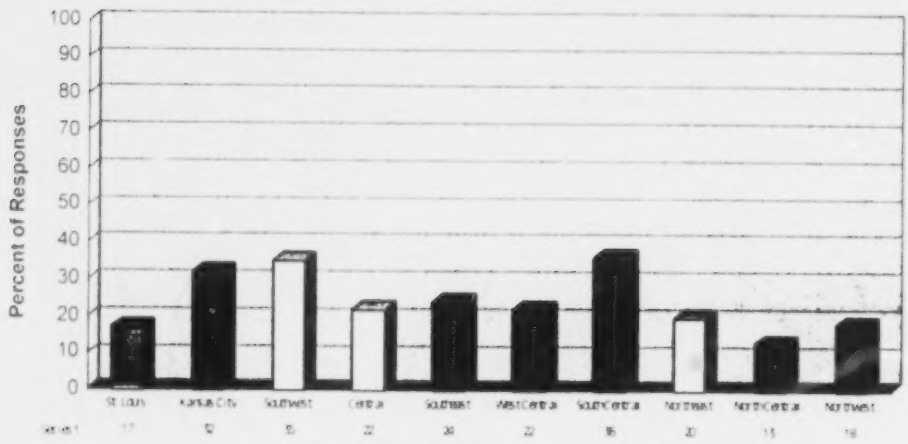
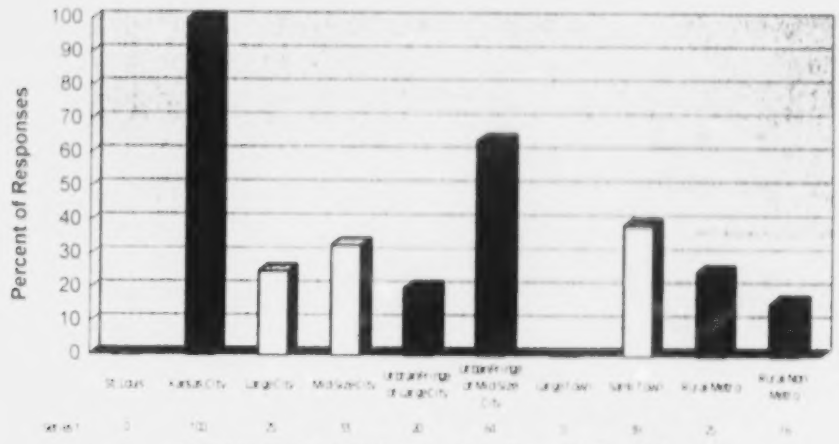
Recruitment and Retention Experience for Special Education: Severely Developmentally Disabled by Supervisory Region (1998-1999)



Recruitment and Retention Experience for Special Education: Severely Developmentally Disabled by Census Classification (1998-1999)



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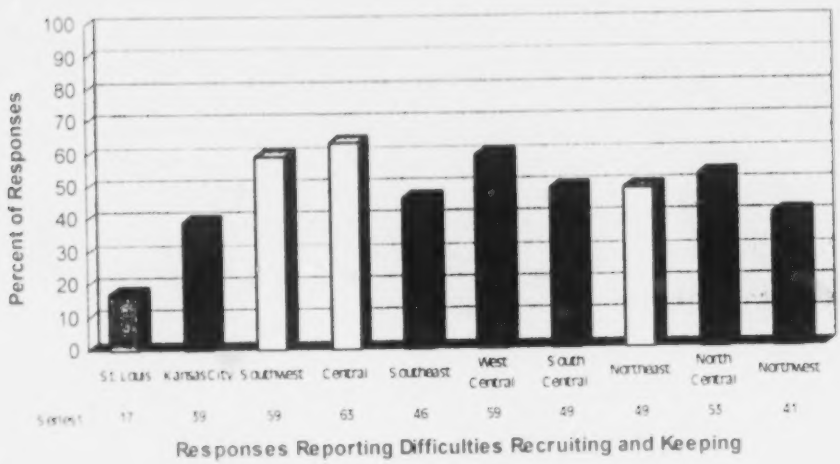
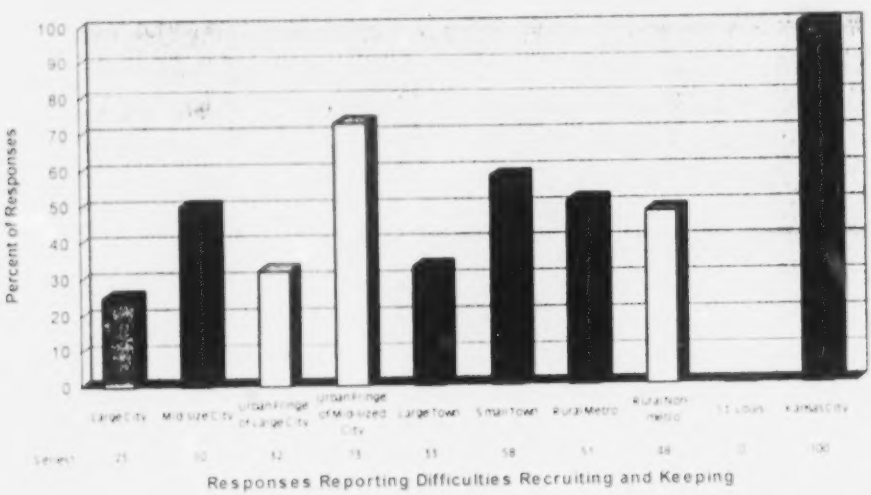
Recruitment and Retention Experience for Special Education: Cross Categorical Endorsement by Supervisory Region (1998-99)



Recruitment and Retention Experience for Special Education: Cross-Categorical Endorsement by Census Classification (1998-99)



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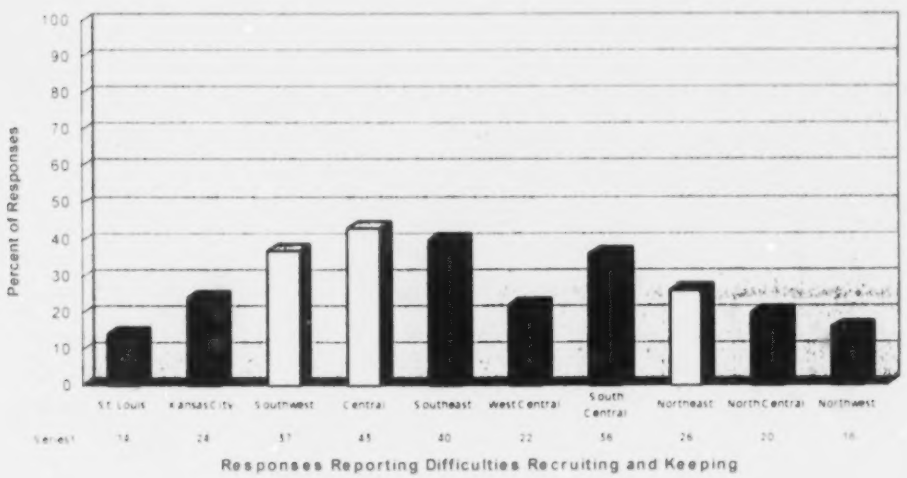
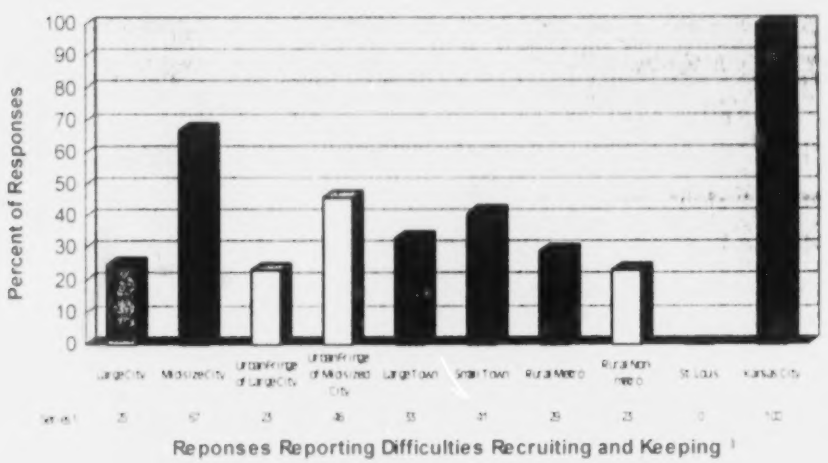
Recruitment and Retention Experience for Special Education: Physical and Other Health Impairments (POHI) Endorsement by Supervisory Region (1998-99)



Recruitment and Retention Experience for Special Education: Physical and Other Health Impairments (POHI) Endorsement by Census Classification (1998-99)



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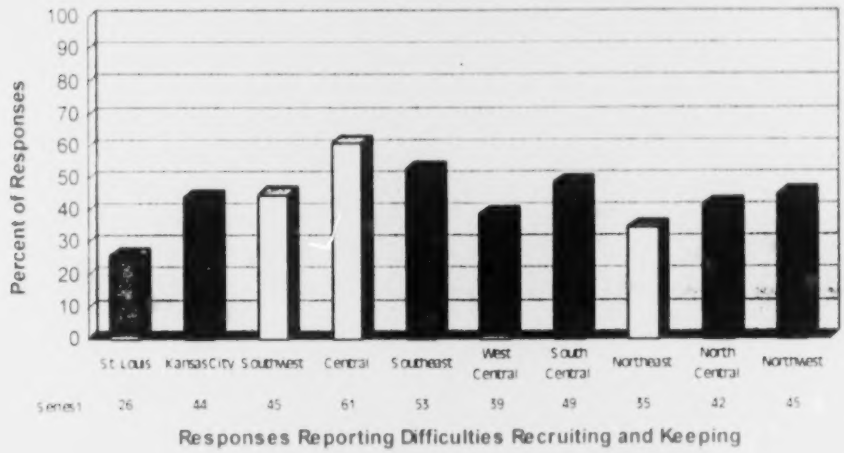
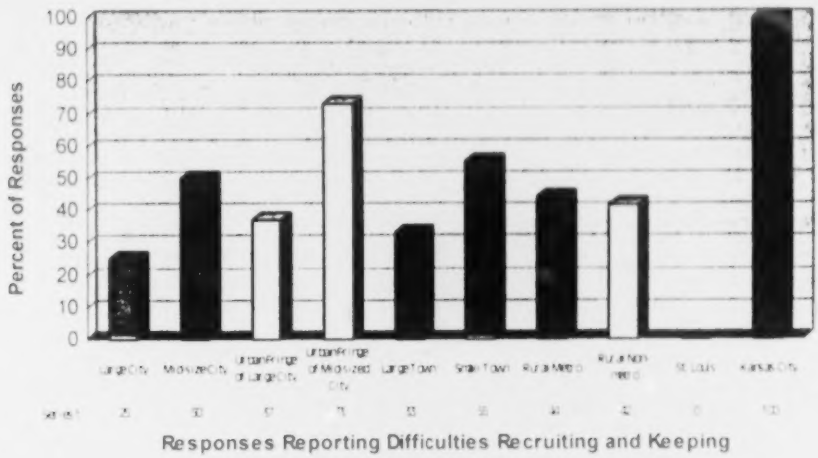
Recruitment and Retention Experience for Special Education: Mentally Handicapped Endorsement by Supervisory Region (1998-99)



Recruitment and Retention Experience for Special Education: Mentally Handicapped Endorsement by Census Classification (1998-99)



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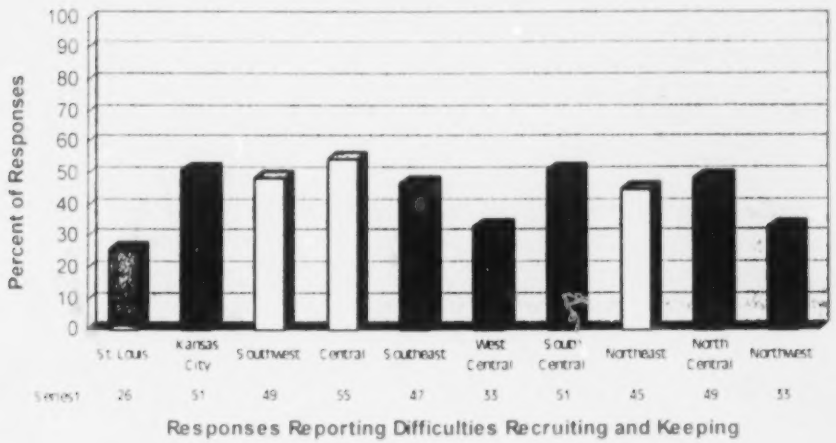
Recruitment and Retention Experience for Special Education: Behavior Disordered Endorsement by Supervisory Region (1998-99)



Recruitment and Retention Experience for Special Education: Behavior Disordered Endorsement by Census Classification(1998-99)

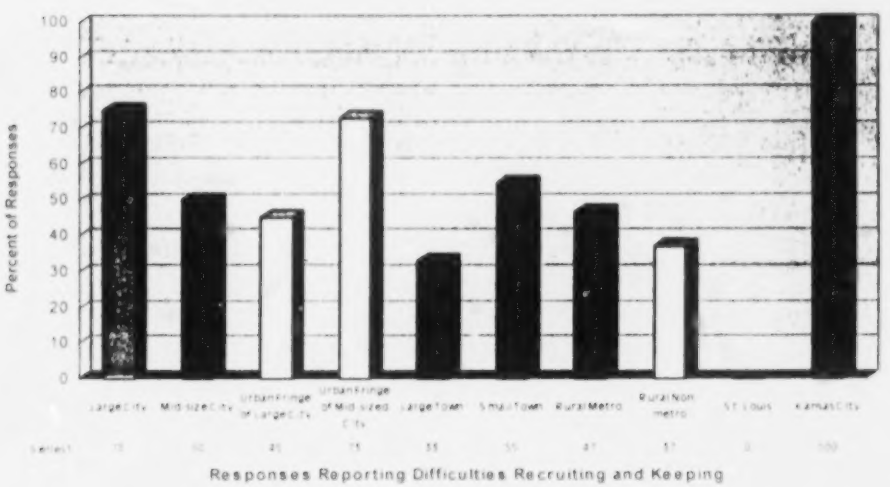


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Table 5: Certificate Areas Not Appearing to Present Recruitment and Retention Difficulties

Whereas certification areas presented in the above charts were identified by 25% or more of survey respondents, certification areas presented in the table below were identified by **fewer than 25%** of survey respondents. Percents of response greater than 25% are indicated in **bold-face** type. For each certificate, the table presents respondent percents by Supervisory Region ("white" rows) and Census Classifications (shaded rows).

Certification Area	St. Louis	Kansas City	Southwest	Central	Southeast	West Central	South Central	Northwest	North Central	Northwest
	St. Louis	Kansas City	Large City	Mid-Size City	Urban Fringe of Large City	Urban Fringe of Mid-Size City	Large Town	Small Town	Rural Metro	Rural Non-Metro
Early Childhood Ed	0	7	16	10	7	10	18	6	18	18
	100	0	**25**	0	7	**27**	0	9	9	**12**
Early Childhood Special Ed	11	27	27	20	20	20	24	25	24	20
	100	0	0	**33**	22	**36**	0	**27**	**18**	**21**
Elementary	0	7	10	14	11	10	9	6	16	22
	0	**100**	0	17	3	0	0	**11**	5	**14**
Elem. Art (End.)	6	14	10	16	15	**25**	**27**	18	24	18
	100	0	0	**33**	8	**36**	0	**18**	**13**	**20**
Elem. French (End.)	26	7	10	6	20	12	7	20	13	8
	100	0	0	**33**	20	0	**33**	**16**	**11**	**10**
Elem. German (End.)	23	2	4	16	8	18	4	6	2	2
	100	0	0	17	13	0	**33**	**12**	**7**	**6**

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Certification Area	St. Louis	Kansas City	Southwest	Central	Southeast	West Central	South Central	Northwest	North Central	Northwest
	St. Louis	Kansas City	Large City	Mid-Size City	Urban Fringe of Large City	Urban Fringe of Mid-Size City	Large Town	Small Town	Rural Metro	Rural Non-Metro
Elem Health (End.)	9	2	2	8	7	4	7	4	0	6
	0	0	0	0	7	9	0	7	4	4
Elem Hebrew (End.)	0	0	0	4	0	0	0	2	0	0
	0	0	0	0	0	0	0	0	0	1
Elem Italian (End.)	0	0	0	2	0	0	0	2	0	0
	0	0	0	0	0	0	0	1	0	1
Elem Latin (End.)	6	0	2	4	0	2	0	4	0	0
	0	0	0	0	3	9	33	2	0	1
Elem Physical Ed (End.)	6	2	2	12	5	6	13	10	4	14
	100	0	0	33	5	9	0	4	4	10
Elem Russian (End.)	0	2	2	2	0	0	2	2	0	0
	0	0	0	0	0	0	0	1	2	1
Mid. Sch Language Arts	9	10	12	24	11	20	20	14	16	16
	0	0	0	33	12	9	33	13	11	18
Mid. Sch Social Studies	9	5	6	10	11	14	16	6	13	2
	0	0	0	33	8	18	0	7	7	14

Certification Area	St. Louis	Kansas City	Southwest	Central	Southeast	West Central	South Central	Northwest	North Central	Northwest
	St. Louis	Kansas City	Large City	Mid-Size City	Urban Fringe of Large City	Urban Fringe of Mid-Size City	Large Town	Small Town	Rural Metro	Rural Non-Metro
Mid. Sch. Agric. Ed. (End.)	0	10	10	18	9	10	7	16	7	33
	0	0	0	17	3	18	33	11	13	15
Mid. Sch. Business Ed. (End.)	9	10	6	14	11	14	7	14	16	20
	0	0	0	33	12	0	33	9	7	14
Mid. Sch. Drama (End.)	14	5	14	10	7	10	9	4	4	4
	0	0	0	0	10	18	33	8	11	7
Mid. Sch. Speech (End.)	6	20	22	10	13	25	20	18	22	27
	0	0	25	17	8	27	0	22	31	17
Agric.	0	12	10	20	9	16	7	20	11	29
	0	0	0	17	7	9	33	14	13	16
Allied Arts	0	2	0	0	0	0	0	2	0	0
	0	0	0	0	0	0	0	0	0	0
Business Education	9	10	10	20	18	16	4	16	18	24
	0	0	0	50	10	9	0	11	13	18
Drivers Education	3	7	22	12	11	6	9	6	9	14
	0	0	0	0	3	27	0	9	16	11

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Certification Area	St. Louis	Kansas City	Southwest	Central	Southeast	West Central	South Central	Northwest	North Central	Northwest
	St. Louis	Kansas City	Large City	Mid-Size City	Urban Fringe of Large City	Urban Fringe of Mid-Size City	Large Town	Small Town	Rural Metro	Rural Non-Metro
English	6	12	14	16	7	22	13	14	22	22
	0	0	0	17	10	18	33	11	16	18
Health	9	2	4	8	13	4	9	4	4	8
	0	0	0	0	8	18	33	8	5	5
Journalism	17	10	14	12	7	2	9	8	7	16
	0	0	25	17	13	36	0	12	15	6
Physical Education	0	2	0	10	4	6	16	10	2	14
	0	0	0	17	2	18	0	5	9	7
Speech & Theater	14	10	18	16	5	16	16	12	11	10
	0	0	25	17	12	27	33	18	16	9
Social Sciences	0	5	4	6	5	6	11	10	9	22
	0	0	0	0	3	18	0	5	5	11
Vocational Home Ec.	17	10	8	12	7	10	0	13	16	14
	100	100	0	17	10	9	33	6	7	12
K-12 Art	9	17	8	16	16	18	16	14	7	8
	100	100	0	17	10	0	0	13	13	14

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Certification Area	St. Louis	Kansas City	Southwest	Central	Southeast	West Central	South Central	Northwest	North Central	Northwest
	St. Louis	Kansas City	Large City	Mid-Size City	Urban Fringe of Large City	Urban Fringe of Mid-Size City	Large Town	Small Town	Rural Metro	Rural Non-Metro
K-12 ESOL	31	15	10	6	7	10	4	10	7	4
	100	100	50	17	18	9	0	15	11	4
K-12 French	29	10	8	6	13	6	7	10	13	7
	0	100	25	33	20	0	33	14	13	5
K-12 German	17	0	2	8	5	16	4	6	7	4
	0	0	0	17	10	0	33	11	7	4
K-12 Health	6	3	2	6	9	4	16	8	2	8
	0	0	0	0	5	0	0	9	7	6
K-12 Hebrew	0	0	0	2	0	0	0	2	0	0
	0	0	0	0	0	0	0	0	0	0
K-12 Italian	0	0	0	2	0	0	0	2	0	0
	0	0	0	0	0	0	0	0	0	0
K-12 Latin	6	2	0	2	0	2	2	2	0	0
	0	0	0	0	5	0	33	2	0	1
Certification Area	St. Louis	Kansas City	Southwest	Central	Southeast	West Central	South Central	Northwest	North Central	Northwest

	St. Louis	Kansas City	Large City	Mid-Size City	Urban Fringe of Large City	Urban Fringe of Mid-Size City	Large Town	Small Town	Rural Metro	Rural Non-Metro
K-12 Physical Education	3	2	2	10	7	4	16	12	4	14
	100	0	0	17	3	0	0	6	5	10
K-12 Russian	0	0	2	0	0	4	2	2	0	0
	0	0	0	0	0	0	0	0	2	1
K-12 Special Reading	23	15	8	22	16	12	13	24	11	10
	0	0	25	17	20	18	33	12	15	15
Special Ed Blind/Partially Sighted	17	22	24	6	15	18	31	18	4	8
	0	100	25	50	18	27	0	24	20	15
Deaf/Hearing Impaired	17	20	27	16	22	22	29	18	7	16
	0	100	25	50	18	27	0	31	20	14
Advanced Counselor (K-12)	17	5	8	6	18	12	9	6	4	10
	0	0	0	0	10	9	0	12	11	9
School Psych Examiner	6	7	10	14	24	18	9	10	9	10
	0	0	0	17	10	18	0	20	15	9
School Psych	6	2	6	0	7	6	7	6	0	2
	0	0	0	0	3	0	0	7	5	4
Certification Area	St. Louis	Kansas City	Southwest	Central	Southeast	West Central	South Central	Northwest	North Central	Northwest

	St. Louis	Kansas City	Large City	Mid-Size City	Urban Fringe of Large City	Urban Fringe of Mid-Size City	Large Town	Small Town	Rural Metro	Rural Non-Metro
Post Secondary Vocational Counselor	0	2	6	0	5	6	2	4	0	6
	0	0	0	0	0	0	0	8	2	3
Special Education Director	14	22	24	33	20	20	22	22	24	14
	0	0	0	17	20	45	67	21	27	20
Superintendent	14	10	7	14	9	18	7	12	13	20
	0	100	0	17	12	9	0	6	9	15

Recommendations of the Commissioner's Task Force on Recruitment and Retention

December 1999

The enclosed recommendations are submitted by the 31 individuals appointed by the Commissioner to

1. review data, information, and current State and national policies on recruitment and retention of educators for Missouri public schools; and

2. to evaluate, prioritize, and recommend to the State Board of Education policies and strategies that will facilitate staffing Missouri's public schools with highly qualified educators.

While Task Force members endorse the recommendations, they acknowledge that each recommendation will require additional background information and refinement to move forward.

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PROPOSAL 1

Recommendation: Increase and expand the minimum salary requirements to span the total teaching career with a built-in growth factor.

Audience: State Legislature and Department of Elementary & Secondary Education

Rationale: Recruitment of talent is negatively impacted by low starting salaries. Teachers in many districts receive no salary increases. Understandably, teachers presented the opportunity to increase their salaries are moving from lower-paying to higher-paying school districts. Therefore, an overall salary increase makes teaching a more lucrative career choice and helps rural districts compete in teacher recruitment. Establishing periodic minimum salary adjustments recognizes that increased years of experience generally implies increased worth to the school district and productivity, thereby assisting particularly rural and urban school districts in retaining experienced educators. In these ways, the recommendation assists the state in promoting equity among districts.

Strengths/Weaknesses:

Strengths:

- Helps equalize salaries among similar districts
- May reduce disparities between lowest paying districts and others
- Is similar to existing program, thus many operational mechanisms are already in place

Weaknesses:

- Does not really address inequities in pay among highest districts and others at minimum.
- Automatic increases in minimum levels keyed to spending may not be linked to market conditions.

Method Evaluating Impact: Track district-to-district teacher turn-over rates, exit rates from profession and reasons for exiting (e.g., are individuals exiting for financial reasons), effect on degree of difficulty experienced by rural and urban districts in attracting candidates, and increases in enrollment in teacher preparation institutions.

Fiscal Implications: $20 million to DESE ($10 million increase); unsure of impact on local budgets; i.e., having a higher percentage of teachers with greater number of years of service suggests overall higher expenditures

PROPOSAL 2

Recommendation: Fund the original concept of Beginning Teacher Assistance Programs.

Audience: State legislature, State Board of Education, Department of Elementary & Secondary Education

Rationale: Missouri statistical and anecdotal data indicate that as many as one-third of those prepared to teach in Missouri classrooms either never do so or do not stay in the profession for more than five years; conversely, data also indicate that individuals who last in the profession for at least five years tend to stay in the profession. Research conducted by the Department further corroborates that neither the beginning teacher nor the mentor perceive the mentoring to be helpful either in meeting the needs of the beginning teacher or in increasing the performance of the mentor's students. Clearly, some percentage of those who exit the profession prior to the fifth year are doing so because they were not sufficiently supported during their induction. While the "Excellence in Education Act" mandated colleges and universities to provide beginning teacher assistance and while school districts are required to provide mentors for new teachers, the program as a whole has not received the funding necessary to meet the induction needs of beginning teachers. This recommendation is, therefore, targeted at addressing the problem of early attrition of new teachers by fully funding the original intention of beginning teacher assistance. Funding is needed to reinstate stipends and training for mentors, to allow teachers to use their mentoring activities during the school day toward their Career Ladder, and to support the release time needed by mentors to be available to the beginning teacher. Funding is further needed to facilitate the involvement of higher education (both pedagogy and subject-matter faculty) in Missouri's public schools.

Strengths/Weaknesses:

Strengths:

- decreasing attrition due to under-supported beginning professionals (conversely, increasing retention)
- increased involvement by higher education faculty in Missouri's schools
- identifying models of highly successful mentoring programs for replication across the state

Weaknesses: Cost, although the loss of beginning teachers presents a considerable cost already

Method of Evaluating Impact: Once funding were made available, track the performance and retention rates of those who participate as mentees and as mentors and compare to performance and retention rates of those not participating and to performance and retention prior to funding; repeat periodically the Department's professional development study to determine changes in teachers' perceptions regarding the impact of mentoring on beginning teachers, mentors, and their students' performance.

Fiscal Implications:

- new monies would be needed

PROPOSAL 3

Recommendation: Provide incentives to entice retirees back into the classroom during times of shortage. The following specific incentives are recommended:

1. introduce a multiplying factor for years of service above 30
2. mimic St. Louis retiree opportunity to return to the classroom for two years in area of critical shortage without loss of pension
3. allow individuals who are eligible to retire to freeze retirement and then to contribute to a defined-contribution plan for the remainder of career (T-Drop)

Audience: Public School Retirement System, State Board of Education, State legislature

Rationale: Current Missouri teacher retirement systems provide dis-incentives to re-enter the profession, i.e., those eligible for retirement risk losing their benefits, are limited in the amount they may teach, and are not further building their retirement accounts. These individuals are, however, a valuable resource for Missouri school districts, particularly at a time when increasing numbers of Missouri teachers are nearing eligibility. This proposal represents a short-term solution to retaining experienced teachers in critical shortage areas (subject areas and regions).

Strengths/Weaknesses: None identified at this time.

Method of Evaluating Impact: Monitor the level of usage through surveys of those nearing eligibility and district administrators.

Fiscal Implications: Born by Public School Retirement System and its members

PROPOSAL 4

Recommendation: Create an "Advantage Missouri"-like program targeted at high-need teaching areas--both by certification area and geographic region. Program participants' loans would be forgiven upon satisfying a contractual commitment to be determined.

Audience: Coordinating Board for Higher Education and State Board of Education

Rationale: The current Coordinating Board "Advantage Missouri" program does not specifically address Missouri's needs for teachers with specific credentials in specific locales. The creation of such a program would further assist the two agencies in targeting monies and efforts to improve the educational and economic climate of Missouri.

Note 1: In the 1998-99 legislative session, the Missouri General Assembly passed legislation (HB889) to forgive student loans for critical teacher shortages. However, no money was appropriated. A budget request for approximately $6-million has been submitted for FY2001.

Note 2: See also Proposal 7. Where Missouri House Bill 889 provides for State forgiveness of loans, Proposal 7 calls for forgiveness of Federal Stafford/Perkins loans. The two proposals, therefore, are linked in their intention to forgive loans for individuals seeking certification in high-need subject areas or regions.

Strengths/Weaknesses:

Strengths:

- The recommendation targets loan forgiveness at specifically identified subject-area and geographic shortages.

Weaknesses: None identified.

Method of Evaluating Impact: Track usage and the recipients.

Fiscal Implications:

- funding to support loan forgiveness

PROPOSAL 5

Recommendation: Expand access to the Career Ladder program by making it available to teachers after their third year of teaching (vs. the current fifth-year requirement)

Audience: State Legislature, State Board of Education, and Department of Elementary & Secondary Education

Rationale: Missouri data suggest that many teachers leave the field by the fifth year, when individuals become eligible to participate in Career Ladder. Career Ladder is not only a sound program for encouraging student-centered learning activity, but it also provides a needed salary supplement. Extending eligibility to the third year would create earlier access to the program for use as a retention strategy.

Strengths/Weaknesses:

Strengths:

- The recommendation capitalizes on a good program

Weakness:

- None.

Method of Evaluating Impact: Track through follow-up the impact on retention of fourth- and fifth-year teachers in Career Ladder districts and compare to the retention of fourth- and fifth-year teachers in non-Career Ladder districts.

Fiscal Implications: If Career Ladder eligibility were extended to three years past experience rather than five, the cost to the state would be approximately $2 million. There are 2,846.24 teachers in Career Ladder districts who would qualify under this change. Statewide 93% of those eligible choose to participate. Participation level can cost the state 40%,50%,or 60% (most often 60%). The $2 million represents a Stage I estimate. As these individuals progressed to Stage II, the cost would be $4.7 million; Stage III costs would be $7.9 million.

PROPOSAL 6

Recommendation: Add options to the current certification process, thereby allowing for greater flexibility, accountability, and licensure portability for candidates who hold a bachelor degree and who can demonstrate knowledge of pedagogy and subject-matter for the certification area in which they are applying. This recommendation is not intended to replace certification, but rather to provide options for those who can demonstrate the knowledge and skills required by the certificate for which they are applying.

Options for Demonstrating Knowledge of Pedagogy Upon issuance of a provisional or special assignment certificate, applicants should demonstrate competence in the area sought via the following means:

- development of a portfolio demonstrating competence in the ten MoSTEP beginning teacher Quality and Performance Indicators. The applicant's portfolio will be evaluated by a teacher preparation faculty member with appropriate credential. The portfolio requirement would be waived for applicants who already hold a valid Missouri initial certificate and who have already created a MoSTEP-based portfolio during their initial preparation.
- successful Performance Based Teacher Evaluations over an extended period of time
- demonstrated positive impact on student performance (e.g., behavior records, attendance, academic achievement, parent surveys, student surveys, etc.)

Options for Demonstrating Knowledge of Content Upon issuance of a provisional or special assignment certificate, applicants should demonstrate subject-matter knowledge competence via a combination of the following:

- for applicants not holding a degree in the content area for which a Missouri certificate is being sought, passing the PRAXIS II Subject Area Examination in the designated or desired area at either the minimum Missouri passing or at the level of the state from which the applicant is applying
- demonstrated positive impact on student performance (e.g., academic achievement, state- mandated tests, standardized tests, district-approved tests, assessments, etc.)
- masters, specialist, or doctorate in the subject area sought
- course work in specified subject area (undergraduate where appropriate in graduate education)
- appropriate professional development specifically related to the subject area sought
- work experience in the related subject area sought

Audience: State Board of Education (assuming state regulation)

Information needed: Current certification statute and regulations. State statute = state assessment, bachelors in state approved institution

Rationale: The recommendation would address teachers teaching outside of their certification area, teachers applying for Missouri certification from another state, Missouri teachers

(Proposal 6 continued)

obtaining additional certificates, or individuals holding a degree in an area outside of education. The recommendation would affect all Missouri school districts experiencing difficulty obtaining certificates for desired employees, would have long-term impact on shortages in critical needs areas, would preserve high standards and public accountability, would enhance the quality of work force, focus on preparation, retention, and recruitment. People should be provided choice and flexibility in entering the teaching profession. Choice is not to be interpreted as replacing certification; any prospective teacher who may enter the teacher education system in this way must meet full certification as specified in the provisional and special assignment certificate requirements.

Strengths/Weaknesses

Strengths:

- allows for flexibility, portability, and variety of means of accountability
- provides a more equitable system for all teachers, including teachers entering Missouri from other states
- increases the number of teachers in all areas and, hopefully, lessens the number of teachers teaching out of field
- encourages job-embedded professional development

Weaknesses:

- requires extra time from and acceptance by higher education institutions

Methods of Evaluating Impact

- Survey of administrators to identify impact of the options on their efforts to recruit and retain qualified compared against the 1999 Recruitment & Retention survey of administrators as a baseline
- Tracking applicants who have used this method to obtain full Missouri certification

Fiscal Implications

- to DESE: funding to support annual survey of administrators
- to IHEs: funding to compensate faculty to review applicant portfolios

PROPOSAL 7

Recommendation: Include Stafford loans along with Perkins loans in the loan forgiveness program and expand the program to include the following restrictions:

1. pro-rate loan forgiveness by percentage on an extended term (3-5 years)
2. dedicate loan forgiveness to reducing critical subject-area shortages
3. dedicate loan forgiveness to reducing urban and rural shortages

Audience: State legislature and State Board of Education

Rationale: Historically, Stafford loans represent a greater percentage of students' loan packages; however, they have not historically been reduced by the loan forgiveness program. This recommendation not only addresses the entirety of student loan packages, but more importantly, ties forgiveness to reducing teacher shortages in targeted subject-area and geographic/demographic regions.

Note 1: Stafford and Perkins are Federal, rather than State, loan programs. Historically, Perkins loans have been forgiven by the Federal government. Although Federal statute allows for the forgiveness of Stafford loans, to date, money has not been allocated to forgive this category of Federal loan. Further, Stafford loans (which do not require demonstration of economic need as is required by Perkins) represent a significantly larger proportion of the loans available to students.

Note 2: See also Proposal 4. Where Proposal 7 focuses on the Federal Stafford and Perkins loan forgiveness programs, Proposal 4 focuses on a Missouri loan forgiveness program. The two proposals, therefore, are linked in their intention to forgive loans for individuals seeking certification in high-need subject areas or regions. Unless Federal monies were to be dedicated to forgiveness of Stafford loans, State monies would need to be authorized to make up the difference.

Strengths/Weaknesses:

Strengths:

- increases flexibility within the region experiencing critical shortages

Weaknesses:

- cost

Method of Evaluating Impact: Collect and analyze regional data to identify the degree to which applicants who received Stafford and/or Perkins loans are staying in the subject/region after their loans were forgiven.

Fiscal Implications: Not known at this time.

PROPOSAL 8

Recommendation: Create state-supported salary incentives for high-need areas identified by region within the state (vs. statewide)

Audience: State Legislature, State Board of Education, Department of Elementary & Secondary Education

Rationale: Survey data indicate that all districts are experiencing increasing difficulty in finding candidates for some specialities; but the specific difficulties being experienced are not generalized across the state. What may be a shortage in one region may not be a shortage in another region. This recommendation provides a short-term response to regional labor shortages. A salary supplement based on region may help to reallocate existing teachers among districts and may encourage teachers from other states to apply in Missouri. As areas of need change, so would the areas.

Strengths/Weaknesses:

Strengths:

- employs market incentive–a concept that works in other industries, acknowledging that education and business are not identical industries.
- cost goes away when no longer a shortage

Weaknesses:

- the state would need to refine its methods of identifying critical needs areas
- raises question of dealing fairly with teachers who are currently teaching in shortage areas
- encourages current teachers to seek new endorsements, thereby potentially creating other unintended shortages
- may cause anxiety among teachers

Method for Evaluating Impact: Track the number of salary incentives given and the number of new teachers coming into Missouri rural and urban school districts from out-of-state and changes in teacher education enrollment.

Fiscal Implications:

- funding to support ongoing determination of regionalized critical needs
- funding to support research to determine what the optimum size and number of salary supplements needed to affect significant reductions in need
- (potentially) permanent funding to support supplements (i.e., Who bears the cost of supplements over time? the district? DESE?)

PROPOSAL 9

Recommendation: Increase fiscal support to implement MoSTEP.

Audience: State Legislature, State Board of Education, Department of Elementary & Secondary Education

Rationale: Qualified and quality teachers do not come without quality training programs–whether the program is a traditional one or an alternative one. DESE needs to play both a regulatory and a technical assistance role in that process. However, additional personnel are needed to implement both roles to assure that Missouri's classrooms are staffed by both fully certificated and fully qualified educators. Additional support is, therefore, needed to support site visits and technical assistance to institutions.

Strengths/Weaknesses:

Strengths:

- DESE could serve as a clearinghouse for innovative approaches to educator preparation
- DESE could assist institutions in their data-collection and analysis efforts as required under the MoSTEP rule

Weaknesses: None indicated.

Method of Evaluating Impact: Monitor the number of programs being approved before and after implementation of MoSTEP and the performance and retention of graduates of those programs.

Fiscal Implications:

- estimated to be approximately $125,000.00 (as designated in the fiscal note approved with the Spring 1999 MoSTEP rule amendment)

PROPOSAL 10

Recommendation: Revise "Teacher Education Scholarship" program from funding students during the freshmen year of college to funding students in the senior year.

Audience: State Board of Education

Rationale: Analysis of program data indicates that a relatively low percentage of those who have used the Scholarship actually ended up in Missouri classrooms. Although they may have begun their collegiate careers intending to teach, they changed majors along the way. For this group, their "Teacher Education Scholarship" turned into a low-cost loan rather than the teacher recruitment incentive for which was intended. Therefore, this recommendation would shift eligibility from the freshmen year to the senior year when, presumably, applicants would be more committed to completing their preparation and entering Missouri classrooms.

Strengths/Weaknesses:

Strengths:

- Scholarship dollars would be provided to students who are seriously committed to teaching as a profession, thereby increasing the likelihood that the investment would yield greater numbers of teachers for Missouri classrooms.

Weaknesses:

- Eliminates the Scholarship's effectiveness as a freshmen-level recruitment tool *(see, however, corresponding recommendation to create a high-school "teacher education scholarship")*

Method of Evaluating Impact: Track the recipients of "Teacher Education Scholarships" to determine how many are actually employed as teachers in Missouri classrooms.

Fiscal Implications: No change from current investment.

PROPOSAL 11

Recommendation: Facilitate transfer of state credits toward retirement eligibility for pension

Audience: State legislature, State Board of Education, Public School Retirement System

Rationale: As increasing numbers of educators move from state to state and as Missouri school districts attempt to recruit educators from neighboring states, district recruitment efforts could be enhanced by assuring applicants that their credits toward retirement eligibility will travel with them to Missouri. This recommendation would allow out-of-state educators to transfer years of service to meet eligibility requirements into Missouri. By way of example, an individual who had taught for ten years in Iowa and then came to Missouri where he/she taught for an additional twenty years would have a total of thirty years retirement service. Upon retirement, the person would receive ten years' worth of retirement benefits from Iowa and twenty years' worth of benefits from Missouri.

Strengths/Weaknesses: None identified at this time.

Method of Evaluating Impact: Monitor level of usage through surveys of educators coming to Missouri school districts and through district administrators' experiences in using the recommendation in recruitment efforts.

Fiscal Implications: Born by Public School Retirement System and its members

PROPOSAL 12

Recommendation: The state vigorously pursue an infusion of funds to school districts to encourage and enable districts to pursue a pay-for-performance (merit raises) salary system for educators based on a combination of demonstrated student performance and instructional/administrative competence.

> ***Note Regarding This Recommendation:*** This recommendation represents a commitment to tying educator compensation to demonstrated performance rather than only to longevity and/or accumulated professional development activities. In recognition of the complexity and seriousness of the issues which surround this concept and the impact of a move from a pre-determined district salary schedule to a total or partial pay-for-performance system, it is further recommended that a Task Force be appointed to refine the recommendation.

Audience: State legislature, State Board of Education, and Department of Elementary & Secondary Education

Rationale: Educators, like all professionals, pursue their career with varying degrees of competence. Educators who are competent should be adequately compensated; educators who are extremely competent should be compensated at a higher level; educators who are less competent should be compensated a lesser level. Pay-for-performance is a retention strategy that should have both short- and long-term benefits. It also would have a secondary impact, both short- and long-term, on recruitment. Pay-for-performance will stimulate more accurate assessment of performance and more effort toward excellence in performance.

Method of Evaluating Impact: Track the retention of teachers under a pay-for-performance system and compare to the retention of teachers under traditional salary schedules. Although, data should be collected on educators, particular attention to be focused on tracking the impact on high-performing educators.

Fiscal Impact: Unknown at this time.

PROPOSAL 13

Recommendation: Reduce to a simple majority the vote needed to approve funding increases for improving working conditions and salaries for Missouri educators.

Audience: State Legislature and general public

Rationale: This recommendation addresses the significant need for additional resources and has potential to have long-term impact on the physical plant, working environment, and salaries available to attract and retain effective educators.

Strengths/Weaknesses: None identified at this time.

Method of Evaluating Impact: Comparisons of the number of school districts able to implement a tax levy increase or to adopt school bond issues with a simple majority compared to those during the last ten years that have failed to pass a tax levy increase or bond issue due to the super-majority requirement.

Fiscal Implications: No state resources would be encumbered; conversely, local funds and control of those funds would be increased.

PROPOSAL 14

Recommendation: Assure quality in alternative routes to certification.

Audience: State Board of Education, Department of Elementary & Secondary Education

Rationale: Anecdote, at the least, indicates a population of degree-holding individuals who could be recruited into Missouri classrooms if alternatives to traditional teacher preparation were provided to them. However, to assure the state that these individuals are prepared to have a positive impact on student learning and to assure the career-changer of a supported transition from one career to another, alternative routes to certification must include a state program-approval process. State-approved programs must require, prior to an individual's employment in a district, demonstration of competencies related to human development and learning, diversity, pedagogy, state and classroom performance-based curriculum/assessment guidelines, classroom management, communication skills, as well as subject-matter competencies. Such alternative paths to certification could provide the mid-career changer with an immersion program before and on-going support during completion of the program while allowing the individual to be fully employed; such an approach to preparing teachers would require extensive collaboration among higher education, LEAs, and RPDCs. Programs as are envisioned under this recommendation are intended for people already holding baccalaureate degrees in areas other than education. This recommendation is not to be interpreted as replacing certification.

Strengths/Weaknesses:

Strengths:

- addresses mid-career transitions
- assures high-quality, state-approved programs

Weaknesses: none identified.

Method of Evaluating Impact: tracking the classroom performance and retention rates of individuals involved in these programs and comparing their performance and retention to that of graduates of traditional teacher preparation programs

Fiscal Implications: none, except the additional oversight required by DESE

PROPOSAL 15

Recommendation: Create and fully fund a Funding-for-Results (FFR)-type reward system for colleges of education to recruit, train, place, and support teachers in high-demand areas. High demand is here defined as (a) a subject area in which a district has difficulty attracting qualified candidates, (b) locations with difficulty attracting qualified candidates, or (c) low-performing districts.

Audience: Coordinating Board for Higher Education, State Board of Education, State Legislature

Rationale: The Coordinating Board currently rewards public colleges and universities for the performance of their graduates. This recommendation would design a parallel program specifically targeted at educator preparation programs in identified shortage certification areas, for locations to which applicants do not readily apply (e.g., very rural or urban), or for low-performing districts. Such a program should include funding rewards tied to the number of candidates who complete a certification program in a critical-need area and are placed in difficult-to-staff locations or in low-performing districts. Additional rewards could be linked to the length of time that graduates of the institution stay in Missouri school districts, thus rewarding university/public school collaborative efforts to support beginning teachers.

Strengths/Weaknesses:

Strengths:

- extends the concept of pay-for-performance to the preparing institution, thereby acknowledging those Missouri programs demonstrating particular success in recruiting, retaining, preparing, and supporting beginning teachers for Missouri school districts
- potentially providing models for other institutions to emulate

Weaknesses: None identified.

Method of Evaluating Impact: Tracking the district performance of "rewarded" programs' graduates and comparing them to the performance of graduates of non-"rewarded" programs.

Fiscal Implications:

- additional appropriations would be required

PROPOSAL 16

Recommendation: Design community-college based pathways to teaching careers by enabling students to complete a two-year, state-approved program leading to an "Educational Assistant" credential to be contained within the community college Associate of Arts degree.

Audience: State Board and Department of Elementary & Secondary Education

Rationale: This recommendation specifically addresses paraprofessionals and substitutes as it gives them opportunities for career development in education. The proposed Educational Assistant credential would be used as an entry requirement for paraprofessionals and substitutes, thereby assuring school districts that these individuals had experienced an introductory curriculum in the subject areas and pedagogy (e.g., general instructional strategies, classroom management, developmental theory, learning theory, etc.). The recommendation creates opportunities for minorities and underrepresented populations to enter the profession through community colleges. From the Associates level, candidates could transition smoothly into a baccalaureate institution to complete their certification. Although the recommendation would require revision of the current State Board rule restricting community college course offerings in educator preparation, it would take advantage of the proposals emanating from the Statewide Teacher Education Articulation Project.

Strengths/Weaknesses:

Strengths:

- increases preparation of paraprofessionals and substitutes for Missouri school districts
- creates state-approved career opportunities for individuals with access to community colleges
- takes advantage of tuition-reimbursement opportunities at community colleges for graduates of A+ high schools
- provides for smooth transition from completion of educational assistant credential to full certification

Weaknesses: None identified.

Method of Evaluating Impact: Track individuals who initiate such a program, individuals who complete the educational assistant credential, and individuals who finish their certification: who is using the opportunity, how do they perform in the classroom, how long do they stay in the district where they were employed as a paraprofessional or substitute upon completion of the certification.

Fiscal Implications: None

PROPOSAL 17

Recommendation: Revise restrictions regarding compensation/financial support for individuals during their student teaching.

Audience: State Board of Education and Department of Elementary & Secondary Education

Rationale: Since there is no apparent statute or State Board rule restricting pay for student teaching, the State Board should reduce (if not eliminate) the barrier to allow candidates to continue their district employment while working toward certification. Doing so would allow candidates who are already employed by a district (e.g., as a paraprofessional) to continue to receive their salary while fulfilling their clinical experience requirements for certification. The recommendation could additionally involve forgivable loans for those not already employed in the district but who remain in the district for three years after completing their certification program. This recommendation could be further expanded to include more financial and participant support (e.g., reimbursements for tuition, transportation, and child care), as in the Harris-Stowe State College "Pathways for Scholars Program."

Strengths/Weaknesses:

Strengths:

- increases opportunities for individuals to complete certification programs
- to the extent that para-professionals were specifically targeted, increases the likelihood of the candidate remaining in the district after completing certification (i.e., national data indicate that a high percentage of para-professionals stay in the community once they obtain their full certification)

Weaknesses: None identified.

Method of Evaluating Impact: Tracking participants and their continued employment

Fiscal Implications: Costs associated with revising the restriction would be borne by the employing school district; however, it is not additional monies. Cost would increase if the program is expanded.

PROPOSAL 18

Recommendation: Offer grants to districts with innovative ideas related to an improved work environment.

Audience: State Board of Education

Rationale: Some research indicates that teachers leave the classroom because their work environment makes it difficult for them to realize the goals they held when they first entered the profession. Through Work Environment Improvement Grants, the State Board of Education could support, study, and/or implement initiatives that improve the working environment for all educators in the state. These initiatives should be designed based on data-collection and data-analysis efforts at local schools or districts. Improvement efforts could include the following:

- improving conditions of the physical environment (e.g., space for the learning environment, materials to support the instructional needs of students, current and functioning technical support);
- improving/increasing opportunities for ongoing collaborative learning environments;
- targeting training and professional development for principals as leaders in ways to impact the social climate of schools. A program of targeted principal leadership skills should be developed to create a satisfying and supportive work environment for new and experienced educators. These programs could include, but would not limited to, opportunities to lead and to share leadership, opportunities to pilot ideas and share impact, opportunities to problem solve, opportunities to share governance, opportunities to become a steward leader, opportunities to become student-centered and customer-driven.

Strengths/Weaknesses:

Strength:

- Work Environment Improvement Grants would provide flexibility to districts while encouraging creative methods for improving school climate.

Weaknesses:

- Weaknesses could include the inherently competitive nature of the grant process, time and resources needed by districts to write the grant proposal, time and resources needed by DESE to determine grant recipients.

Methods of Evaluating Impact: Develop a data-gathering system that provides information on teacher attitudes toward their working conditions and allows for tracking of teacher mobility based on reasons for change (e.g., exit interviews). Impacts of improved working environments initiatives could be monitored through Administrative Core Data and the MSIP process.

Fiscal Implications: Although the size and amount of Work Environment Grants is not known at this time, the impact of losing experienced teachers from Missouri classrooms is being experienced throughout the state.

PROPOSAL 19

Recommendation: Create a new "Teacher Education Scholarship" program for high school students to be awarded by local school districts.

Audience: State Legislature and State Board of Education

Rationale: In recognition of (a) the limited effectiveness of the current "Teacher Education Scholarship" program and (b) the need for initiating teacher recruitment efforts in Missouri high schools, this recommendation re-targets scholarship monies to the high school level. School districts would identify students with an interest and likelihood of pursuing a career in teaching and award them scholarships to enter and complete post-secondary teacher preparation.

Strengths/Weaknesses:

Strengths:

- takes advantage of the close knowledge high school teachers and administrators have of their students
- empowers school districts to "grow their own" teachers

Weaknesses:

- runs the risk of repeating the performance of the freshmen eligibility program; that is, recipients might still change their majors along the way toward graduation from college.

Method of Evaluating Impact: Track recipients to determine how many are actually employed as teachers in Missouri classrooms.

Fiscal Implications: Comparable to current Scholarship program.

PROPOSAL 20

Recommendation: Support research and tracking efforts regarding exiters and staffing needs to inform the above proposals.

Audience: State Legislature, State Board of Education, Department of Elementary & Secondary Education

Rationale: Much is still unknown about Missouri's teaching force. Although current research may indicate where teachers of holding particular certificates may be needed, much is still unknown about why educators leave the system (or stay in the profession). On-going research is needed to understand the conditions under which educators are most motivated to enter the profession, are best trained for their job responsibilities, are most productive once in the classroom, and are most likely to stay in the profession. Each recommendation from the Commissioner's Task Force on Recruitment and Retention includes a provision for evaluating the impact of the recommendation, and this recommendation would provide support for many of those evaluation efforts. Even more importantly, however, systemic evaluation is required to understand fully the array of initiatives impacting the recruitment, preparation, professional development, and retention of high-quality educators for Missouri's schools districts. Missouri's policy makers need this information to prepare for the needs of meeting Missouri's future.

Strengths/Weaknesses:

Strengths:

- increased data-based decision making
- promotion and continuity of high-performing initiatives

Weaknesses: None indicated.

Method of Evaluating Impact: Although nebulous, the impact of research is to be found in what it tells policy makers about the individual and collective impact of their initiatives.

Fiscal Implications: Unknown at this time.

PROPOSAL 21

Recommendation: Design and implement a career curriculum for middle and high school students and integrate that curriculum into the Missouri Comprehensive Guidance Program and Career Pathways

Audience: State Board of Education and Department of Elementary & Secondary Education

Rationale: The largest pool of potential teachers exists in the Missouri public school ***student*** population and, historically at least, teachers have tended to return to teach in their "home" area; therefore, the best opportunity to influence students to explore and pursue careers in education can be attained by teachers and local schools. Further information on other states' education career exploration curriculum should be obtained (e.g., South Carolina).

Areas of highest need (e.g., science, mathematics, technology) may be identified and receive greatest emphasis. The following activities or emphases are proposed:

1. Activities should be integrated at the local level where individual students can be identified.
2. All students should receive instruction through the Comprehensive Guidance Program.
3. All applicable Career Pathways should present education careers as viable student options.
4. District web sites should be used to highlight the benefits of a career in education and student testimonials about what "their" teacher "means to them."
5. Activities should take advantage of the A+ High Schools' mentoring requirement as an opportunity to provide a "prospective teacher experience" under the direction of a master teacher.

Strengths/Weaknesses:

Strengths:

- Easy to integrate into career activities at district site.
- A+ Schools encourage mentoring; these students can be cultivated for teaching.
- Gives professional educators the opportunity to share their experiences improving the public image of education.

Weaknesses: None

Method of Evaluating Impact: Track the number of students from local schools pursuing careers in education and the kind of career exploration curriculum they experienced while in middle school and high school.

Fiscal Impact: $250,000.00 G.R.

PROPOSAL 22

Recommendation: Design and hold regional one-week Career Institutes/Academies to introduce high school freshmen to education careers as a teacher or administrator. Special efforts should be made to recruit students into the teaching areas of science, mathematics, and technology that have noted shortages. Students would be nominated by educators from high-demand fields. The Institutes should be designed to include an overnight experience thereby maximizing the student's time and minimizing travel expenses. Institutes should include three components: 1) Classroom experiences, 2) Tours, and 3) Culture/Teaming.

Audience: State Board of Education and Teacher Associations for funding.

Rationale: This recommendation is intended to address recruitment of high school students into high-need teaching areas.

1. It allows students to make a career decision based on experience rather than merely perceptions.
2. It could be targeted to rural or urban students who might be more inclined to work in the area where they were raised.
3. It provides long-term impact by putting students in education pipe line.
4. It conveys high standards and the quality of professional educators.
5. It builds respect for the profession.
6. It addresses critical needs of instructional shortage areas and geographic needs.
7. It recruits from a population seeking direction for their lives, i.e., high school students.

Strengths/Weaknesses

Strengths:

- Several models exist that can be modified to meet this proposal.
- It can be modified based on regional needs.
- It has the potential to impact positively student decisions of whether or not to purse a career in education.
- Existing RPDC structure could be used to deliver academies.
- Existing state programs (e.g., A+, STC, Tech Prep, etc.) can be used to recruit students.

Weakness:

- Potential logistics problems. Therefore, events might be limited to 30-40 students to increase impact on participants; unfortunately, any limits potentially reduce the number of students who would be served.

Methods of Evaluating Impact:

1. Track students by social security numbers to determine the number who enroll in teacher education programs and who become certified by the state.
2. Pre- and post-test students' impressions of a career in education upon entering and leaving the Institutes.

Fiscal Implications: At an estimated $500 per student for 270 students per year, $135,000.00 annually funded by State Board of Education, Teacher Associations, and GR.